



# e-Report

**Report of Advisory Group on  
Health Effects of Use of Internet and  
Electronic Screen Products**



Department of Health  
The Government of the  
Hong Kong Special Administrative Region

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## ***FOREWORD***

The Advisory Group on Health Effects of Use of Internet and Electronic Screen Products (Advisory Group) was convened by the Department of Health to address the concern for potential health risks related to the increasing use of Internet and electronic screen products.

Information and Communications Technology has become an indispensable part of the daily life of many people in modernized communities. People in Hong Kong are of no exception.

We agree that Internet and related electronic products bring a lot of convenience to us. However, improper use of the new technology may have potential health risks. The age when one starts using this technology and related products is getting younger and younger, and this raises concern about health impact, in particular, on the kids.

Children are our future. We should provide them with a suitable environment, protect them from being affected by possible hazards and guide them through a process of healthy development.

The Report prepared by the Advisory Group sheds lights on important areas that could help children and young people to make better use of Internet and electronic screen products. Recommendations and practical tips are provided for parents and teachers to guide and support their children and students.

I would like to extend my most sincere appreciation to members of the Advisory Group for taking the time and efforts to prepare this Report. The work and concerted efforts needed on this area, however, do not stop at the production of this Report. The Department of Health will keep in view the latest development on the scientific research on this important topic and join hands with partners to promote healthy use of Internet and electronic screen products for our children and adolescents.

Dr Constance CHAN

Director of Health

## ***EXECUTIVE SUMMARY***

In view of the rapid development of Internet and electronic screen products including computers, video games, e-books and magazines, televisions, smartphones and other electronic entertainment and communication screen products, and the related health concerns on children and adolescents, the Department of Health convened the Advisory Group on Health Effects of Use of Internet and Electronic Screen Products (Advisory Group) with the following Terms of Reference:

1. To discuss and comment on harmful health effects arising from use of Internet and electronic screen products (with or without Internet connection) for children and adolescents.
2. To work out a set of recommendations on healthy use of Internet and electronic screen products for children and adolescents, parents and teachers.

### **Position Statements on Health Effects**

The Advisory Group has reviewed information on health effects of 14 health concerns. The following are the position statements of the Advisory Group on health concerns grouped under physical health and psychosocial health:

#### **Physical Health**

##### ***1. Physical fitness and obesity***

The Advisory Group agrees that there is strong evidence to support proportional relationship between obesity and screen time. As this is more relating to sedentary lifestyle and other associated behaviours during these activities like snacking and decreased sleep time, recommendations should be focused on the encouragement and facilitation of physical activities and other healthy lifestyles.

## ***2. Vision***

The Advisory Group agrees that prolonged use of electronic screen products will lead to eye and visual symptoms like ocular discomfort, eyestrain, dry eye, headache, blurred vision and even double vision. It is advisable to adopt measures like regular breaks with eye blinking, make reference to international occupational safety guidelines in computer set-up, choose to view with bigger text size and use stands for tablet personal computers and smartphones, and to maintain an appropriate visual distance with the screen. At present, there is limited evidence to conclude the long term adverse effects on eye and vision problems in relation to use of electronic screen products, but related studies should be observed continuously and overuse of these products is not recommended.

## ***3. Musculoskeletal problems***

The Advisory Group agrees that prolonged use of electronic screen products in a fixed posture can cause or exacerbate musculoskeletal symptoms. It is advisable to adopt ergonomic measures and regular breaks with relaxation exercise to avoid over stressing the muscles. There is limited evidence at the moment to conclude long term adverse effects on the musculoskeletal health relating to use of electronic screen products, but related studies should be observed continuously and overuse of these products is not recommended.

## ***4. Hearing***

The Advisory Group agrees that mobile electronic screen products with audio entertainment function could generate sound at harmful levels. Prolonged exposure to excessive sound levels generated by these products would result in permanent hearing damage. Healthy listening habits should be established at young age.

## ***5. Injury and accident***

The Advisory Group considers use of mobile electronic screen products while doing other tasks may relate to injury and accident. Public awareness and promotion on safe use of mobile electronic screen products to prevent injury and accident is recommended.

## ***6. Infection***

The Advisory Group considers that there is potential risk to spread pathogens through the use of smartphones and other mobile electronic screen products. Awareness should be raised to the users to adopt hygiene precautions like hand washing and avoidance of sharing of such products between different users, especially with individuals who have symptoms and signs suggestive of active infections.

## ***7. Health concerns relating to radiofrequency electromagnetic field***

The Advisory Group notes that there is no conclusive evidence at this stage to show that radiofrequency signals from wireless networks or mobile phones cause cancer in human beings. It is recommended to keep in view the latest scientific information for the health effects of wireless networks or mobile phone use in children.

## **Psychosocial Health**

### ***1. Addiction***

The Advisory Group agrees that the increasing time spent by children on Internet and electronic screen products is a concern. While it is noted that more research and evidence are needed on Internet addiction, the Advisory Group considers that it is more important to prevent children from spending excessive amount of time on Internet and electronic screen products that would affect their other more important tasks or daily routine. Measures that help to increase the protective factors and reduce the risk factors of Internet addiction, which are also consistent with principles of positive parenting, should be promoted.

### ***2. Cyber-bullying***

The Advisory Group agrees that the characteristics of the current Information and Communications Technology make cyber-bullying happen more easily and has a more damaging effect. The association of the serious psychosocial consequences among victims of cyber-bullying is a concern.

Early prevention programme involving the schools are recommended to be continued and further strengthened.

### ***3. Cognitive development and learning***

The Advisory Group agrees that there is currently no conclusion on the effects of learning with electronic screen products including video games in different age groups or use of media in young children under two years of age. The Advisory Group considers that use of Internet and electronic screen products may have other adverse effects on health and development, especially for children under two and children using these products without proper guidance or supervision. To help children have a healthy whole person development and enjoy the benefits brought by the new technology, the Advisory Group recommends parents to provide appropriate guidance and supervision. Parents should discourage children under two years of age to use Internet and electronic screen products.

### ***4. Social development***

The Advisory Group notes the concern that spending too much time on Internet and electronic screen products may hinder the social skill development of children. While more research and evidence are needed on this aspect, the Advisory Group considers that it is more important for parents to facilitate the age appropriate social skill development of children e.g. cultivate more quality time and family activities involving face to face interaction, encourage and facilitate more participation in cooperative group activities.

### ***5. Sleep deprivation***

The Advisory Group agrees that excessive use of smartphones and electronic screen products relates to sleep deprivation which affects growth and development in children and adolescents. Sleeping guide should be advised including establishment of a bedtime routine, suggested sleeping time for different age groups, parenting skills and setting up of stimulation-free and comfortable sleeping environment.

## ***6. Online sexual risky behaviour***

The Advisory Group considers the increasing popularity of Internet use may render adolescents easier to engage in online sexual risky behaviour, especially the vulnerable ones with psychosocial risk factors. Such behaviour may be associated with other adverse psychosocial or mental health problems. Parents, teachers and professionals working with adolescents should be aware of such behaviour in adolescents. Awareness and education programme to address this issue are recommended to be further strengthened.

## ***7. Aggressive behaviour***

The Advisory Group considers that violent content of the video and online games would have adverse effects on the behaviour of the children. Parents should choose appropriate video games for their children and give them relevant guidance. Information and measures to help parents and children choose such games e.g. censorship, rating system, parents' guides would be helpful.

## **Recommendations**

The Advisory Group has made reference to the information on health effects and recommendations by overseas and local authorities. The following are recommendations of the Advisory Group:

### ***General Principles for Parents and Teachers: SAFE ACTS***

#### ***Show***

To show children and adolescents the right attitude and be role models

#### ***Aware***

Be aware of the basic functions, benefits and potential harms of the technology; content of the websites and games that the children are visiting and playing; and consequences of engaging in social networks.



### ***Facilitate***

To facilitate children and adolescents to have a balanced and healthy life

### ***Empower***

To guide and coach children and adolescents to be capable of facing challenges

### ***Agree***

To discuss and agree among parents, teachers, children and adolescents on the rules in using Internet

### ***Communicate***

To have open, caring and non-judgmental communications

### ***Trust***

To trust and respect children and adolescents with proper guidance and open communications

### ***Seek***

To seek help from experts and professionals when necessary

## ***General Principles for Children and Adolescents : DARES***

### ***Development***

To develop a balanced life

### ***Awareness***

Be aware of the benefits and potential risks of the technology

### ***Respect***

To respect and trust parents and teachers

### ***Effective communication***

To have open and effective communications with parents and teachers, and share their feelings and joy

### ***Seeking help***

To seek help from parents, teachers, experts and professionals when necessary

## *Health Tips*

After taking considerations of guidelines and suggestions by relevant local and overseas institutions, as well as local situations, the Advisory Group suggests the following 10 health tips:

### **1 Be physically active, go outdoor**

- 1.1 Consecutive use for more than one hour of Internet and electronic screen products is discouraged
- 1.2 Accumulate at least three hours physical activities daily for pre-schoolers and at least one hour for school children

### **2 Engage in interactive activities in real life**

- 2.1 Play and talk with children especially the younger ones, encourage group activities and appreciate non-academic achievements

### **3 Limit screen time and choose screen activities wisely**

- 3.1 Under 2 years old: Avoid screen time as far as possible
- 3.2 2 to 6 years old: If electronic screen products have to be used, screen time should be limited to no more than two hours a day and under the guidance and supervision by parents or teachers
- 3.3 6 to 12 years old: Limit recreational screen time to no more than two hours a day
- 3.4 12 to 18 years old: Avoid prolonged screen time

### **4 Blink, break and rest**

- 4.1 Rest for 20 to 30 seconds after every 20 to 30 minutes of screen use
- 4.2 Change position, blink eyes, do muscle relaxation exercise

### **5 Adopt proper setting**

- 5.1 Adjust brightness, font size and workstation
- 5.2 Reading distance no less than 50 cm for computers, 40 cm for tablet personal computers and 30 cm for smartphones

## **6 Protect hearing, prevent accident and pay attention to hygiene**

- 6.1 60-60 Rule: Listen at no more than 60% of the mobile product's maximum volume for less than cumulative 60 minutes a day
- 6.2 Avoid using mobile products while doing other tasks requiring attention
- 6.3 Clean the surface of the screen regularly and avoid sharing electronic screen products with others

## **7 Ensure adequate sleep time and appropriate environment**

- 7.1 Turn off the computer and keep other electronic screen products out of reach during sleep

## **8 Be aware of cyber-safety**

- 8.1 Protect privacy, do not meet online “friend” and do not respond to inappropriate messages

## **9 Behave oneself when using Internet and social networking sites**

- 9.1 Do not bully, harass or flam others, and do not spread rumours

## **10 Restrict access to inappropriate content**

- 10.1 Parents should actively involve in children’s Internet use, choose age-appropriate video games for them and monitor their use

## **Practical Advice**

Practical advice in the format of frequently asked questions (FAQs) to address common scenarios through applying the general principles and health tips are prepared. Four sets of recommendations including respective general principles, FAQs and health tips are produced for parents, teachers, primary school students and secondary school students.

## ***CHAPTER 1 BACKGROUND***

- 1.1 Information and Communications Technology (ICT) including Internet and related electronic products e.g. computers, smartphones, tablet personal computers, video games, e-books and televisions, etc. (with or without Internet connection) has been developed rapidly. The revolutionary and affordable technology and products are becoming more and more popular and affecting the daily life of the whole world.
- 1.2 The use of Internet and related products has a lot of potential benefits to our daily life and allows a vast variety of functions which include learning, entertainment, social groups of diverse interest and fascinating information exchange among people of different walks of life across the globe. These are particularly appealing to children and adolescents as their means to real life experience is limited and their curiosity and eagerness to search for recognition are to be fulfilled. In addition, more and more school-age children are using Internet and related products to study and hand in their homework.
- 1.3 Prolonged and improper use of Internet and related products would however result in a lot of harmful effects including physical and psychosocial health issues. Children and adolescents are particularly vulnerable as their ability to self-regulate is immature and they are prone to spend prolonged time in browsing Internet and using these products. Moreover, the body functions of the children are not fully developed and these may be adversely affected if the children are exposed to uncontrolled use of the technology and products.
- 1.4 Parents and teachers are in a very good position to assist the young in healthy use of Internet and electronic screen products. In addition to providing appropriate knowledge and skill to the children and adolescents, it would be helpful to provide parents and teachers with appropriate assistance to enable them to guide the young.

- 1.5 However, most of the parents were born in the generation without Internet, their knowledge and skills about this new technology may not be as good as their children who are born in this digital era. Using Internet and electronic screen products has become integral to the daily life of children. Learning how to use Internet and its application for children is just like learning how to read and write. Children are more and more likely to expose to Internet and electronic screen products at an earlier age.
- 1.6 Parents are ambivalent in letting their children use the new technology. Some parents with young kids are eager to give them electronic toys as soon as possible, to “nurture” them with the best and latest learning modality, hoping they can be winners from the beginning of life. When the children grow older and are spending more and more time in the digital world, parents are worrying that this could be harmful to their children. The difference in attitude and perception in using Internet and various electronic screen products between parents and children often creates conflicts within the family.
- 1.7 On the academic front, students are required to use computers and other means of ICT to study and complete their assignments. Some teachers also communicate with students through social network and latest modes of communication like smartphones. This may be inadvertently perpetuating the improper use of this technology if the teachers and students do not pay attention to its potential harmful effects.
- 1.8 Based on the above, the Department of Health (DH) took a proactive approach to address the issues by convening the Advisory Group on Health Effects of Use of Internet and Electronic Screen Products (Advisory Group) to look into the matter with a view to making recommendations to educate and promote the proper use of Internet and electronic screen products among children and adolescents, and to assist parents and teachers in helping the young. Members of the Advisory Group include medical specialists from relevant Colleges of

the Hong Kong Academy of Medicine, academic and research institute, representatives from non-government organizations (NGOs) with experience on relevant programmes or services, Education Bureau, Social Welfare Department, and relevant units of the DH. Detailed information of the membership is attached at the Annex.

- 1.9 The Advisory Group noted that there had been a lot of work done by various organizations to raise the awareness on Internet safety and Internet addiction in Hong Kong but less emphasis was put on potential adverse effects from the medical perspective in relation to use of Internet and related products. As such, it was agreed that the Advisory Group would mainly focus on the medical perspective towards the health effects arising from improper use of Internet and electronic screen products for children and adolescents, which were the most vulnerable groups. The Terms of References of the Advisory Group were:

To discuss and comment on harmful health effects arising from use of Internet and electronic screen products (with or without Internet connection) for children and adolescents.

To work out a set of recommendations on healthy use of Internet and electronic screen products for children and adolescents, parents and teachers.

- 1.10 The Advisory Group noted that more concerns were relating to the use of newer types of electronic screen products which were becoming more popular. However, the Advisory Group also noted that there were also concerns about the very young watching televisions and videos for learning or recreational purposes. Some electronic screen products like video games or e-books may also have potential harms if they are used improperly. Moreover, spending too much time in front of the screen, i.e. prolonged screen time is also a health concern. The Advisory Group agreed that electronic screen products with a wider coverage, but not just computers and the newer digital products, be discussed.

1.11 In this Report, electronic screen products refer to products of any size that provide audio-visual functions through screen either in installed format or online real time retrieval from networks. These products include computers, video games, e-books and magazines, smartphones, televisions and other electronic entertainment and communication screen products.

1.12 The Advisory Group noted that there were benefits and positive health effects relating to the use of electronic screen products e.g. convenient access to useful health information, facilitate daily activities of the disabled, etc. However, the Advisory Group agreed to focus on the adverse health effects so as to raise the awareness of the target population about its potential health risks and take appropriate precautionary measures.



## ***CHAPTER 2 OVERSEAS AND LOCAL SITUATIONS***

### **OVERSEAS SITUATIONS**

- 2.1 Series of studies, surveillance and reports relating to the use of Internet and related products in children and adolescents have been conducted over the past decade or so in Europe and the United States.
- 2.2 Across countries, it is noted that screen time and going online are starting at a younger age and both activities have become a daily routine of young children and adolescents. Watching television remains the most popular screen time. They are using different products to go online for various reasons such as homework, socializing and entertainment.<sup>1-3</sup>
- 2.3 According to the latest report of Office of Communication (Ofcom) on the trend of media use in children and adolescents in the United Kingdom published in October 2013, there was a sharp increase in the use of tablet personal computers at home among children aged 5 to 15 years old. Tablets were found to become the must-have media device for younger children while older children opted for smartphones. Older children were using their smartphones for a broad range of activities especially social networking. Television continued to be popular and valued by children, and they were accessing television content via smartphones and broadcasters' websites on top of traditional television sets.<sup>1</sup>
- 2.4 In Europe, the “Zero to Eight – Young children and their Internet use”<sup>2</sup> published in August 2013 reported that there was a substantial increase in Internet usage by children under nine years old. In Netherlands and Belgium, over 70% of toddlers and pre-schoolers were already



going online, and in Sweden 70% of children three to four years old went online at least sometimes. Children from zero to eight years old spent time online in watching television, seeking information, completing homework and socializing.<sup>2</sup>

2.5 Another report “Zero to Eight – Children’s Media Use in America 2013”<sup>3</sup> published in Fall 2013 noted that the access of children of the United States to mobile media products was dramatically higher than it had been two years ago. Televisions remained the dominating children’s media time and the average time spent daily was around 30 minutes.

2.6 Since children are now going online at a much younger age, many children do not have adequate ability to protect their own privacy and safety in the Internet, in spite of the fact that awareness of Internet safety among children and their parents has increased in general.<sup>5-8</sup> Children are also less likely to know how to block inappropriate messages.<sup>1</sup>

2.7 As the use of the Internet has greatly increased over the past twenty years, so has its role in becoming a useful forum for child predators. Since children have easy and often unsupervised access to the Internet, they are increasingly targeted for exploitation, sexual and emotional abuse, and maltreatment. By being able to disguise their identity, sexual predators have a great advantage of being able to target and approach their young victims in many popular forums such as chat rooms and social media platforms like Facebook, Twitter, without them ever knowing.<sup>9</sup> Dating back to 2005, American Academy of Pediatrics already published a paper on “Keeping kids safe in cyberspace” and advised paediatricians to tell parents that there was no such thing as online privacy and that inappropriate sites like pornography on the Internet would be unexpectedly come across by kids who would find it quite distressing.<sup>10</sup> In the United States, a survey conducted in 2008 found that 22% of teenage girls and 18% of teenage boys (aged 13 to 19 years) reported sending or posting nude or semi-nude pictures or videos of

themselves online. Of these teens, 15% reported that they sent these sexually suggestive images of themselves to someone they only knew online.<sup>11</sup> In Europe, it was found that 15% of children 9 to 16 years old had received a sexual message and 14% had received a sexual image online.<sup>8</sup> In the latest Ofcom Report, majority of children were confident about their online activities and there had been a decline in children's dislikes about inappropriate content.<sup>1</sup> Moreover, children 8 to 15 years old were more likely to tell someone if they found something online that was worrying, nasty or offensive.<sup>1</sup> A substantial minority of adolescents 12 to 15 years old had a social networking profile which might be visible to people not known to them, and this had increased since 2012 (33% vs 22%).<sup>1</sup>

2.8 Home is where young people have most access and face risks, especially nowadays with widening mobile access.<sup>7,9</sup> Cyber-bullying and downloading viruses topped the list of online concerns for parents. Parents of children 8 to 11 years old were less concerned about television content.<sup>1</sup> A “digital generation gap”<sup>5</sup> was experienced by parents in the use of technology and in the cyber world. Even in parents of young children three to four years old, one-seventh felt their child knew more about the Internet than they did.<sup>1</sup> One fifth of adolescents 12 to 15 years old knew how to disable online filters set by parents.<sup>1</sup>

2.9 Majority of parents are using some forms of skills to protect their children's safety online and parenting their use of the Internet like installing parental controls for games consoles, setting safety mode for entertainment-information websites like YouTube, talking regularly to their children about online safety and setting rules relating to parental supervision.<sup>1-3,5,6,8</sup> In the report “Patterns of risk and safety online -- In-depth analyses from the EU Kids Online survey of 9- to 16-year-olds and their parents in 25 European countries” published in August 2011, it noted that there were different forms of parenting styles ranging from restriction, monitoring, technical to active and collaborative management.<sup>8</sup> It was noted that the higher the education

attainment and social class of the parents, the greater the chance they would adopt active and collaborative management with reasoning and discussion. On the other hand, parents of lower education attainment tended to use restraint and monitoring technology because they lacked the confidence, knowledge, skills and time. Moreover, the type of parenting skills used also depended on the age group and level of maturity of the child. Obviously, as children grow older, the restrictive and monitoring styles become less effective and induce more conflict.

2.10 School is second to home where children and adolescents spend most of their time. Teachers are important influencing persons to children and adolescents. The new technology is also creating challenges for teachers.<sup>12</sup> A survey report on primary and secondary school teachers in England “Protecting Children Online: Teachers’ Perspectives on eSafety Full Report”<sup>13</sup> published in January 2012 found that over 80% of teachers said that their school had an e-safety policy, 77% of primary teachers and 54% of secondary teachers felt that staff had received adequate e-safety training. Vast majority of teachers were confident in advising students on different aspects of e-safety. Most of the teachers felt that their students had the skills and knowledge to use the Internet safely at school. Yet, only 58% felt their students were similarly equipped to use the Internet safely at home as they might be less supervised and had more online freedom.

2.11 Teachers while taking up the role in guiding students in safely use of the Internet could also be targets of cyber-bullying.<sup>12,13</sup> In the above survey in the United Kingdom, 3% of teachers said that they had been cyberbullied by students, one-third of secondary and 7% of primary school respondents said that at least one of their colleagues had been cyberbullied. On the other side, 90% of secondary school teachers and 52% of primary school teachers reported that their students had experienced cyber-bullying. In another survey conducted in 2013 in the United Kingdom on school students three to nine years old, it was found that 10% had received

bullying or intentionally hurtful messages online and 12% admitted to having sent an unkind or nasty message to another person.<sup>14</sup>

## LOCAL SITUATIONS

2.12 Hong Kong has been promoting ICT which is a key enabler underpinning Hong Kong's thriving economy. In its World Competitiveness Yearbook, the International Institute for Management Development ranked Hong Kong first in technological infrastructure in 2012 and 2013. The Government of the Hong Kong Special Administrative Region issued a public consultation on "2014 Digital 21 Strategy" in September 2013, the fifth consultation on "Digital 21 Strategy" since 1998, stating that ICT is moving fast. It is envisaged that children and adolescents must be prepared to face these new changes and challenges.<sup>15</sup>

2.13 According to the Thematic Household Surveys over the past ten years from 2003 to 2012<sup>16</sup>, it is noted that using computer and the Internet are becoming inseparable to the daily life not only in adults but also in children 10 to 14 years old. In the recent survey in 2012, 2.2% of the latter group had spent more than 50 hours per week in using computer and this increased to 13.7% among those aged 15 to 24. Comparing to previous years, there was a trend of increasing percentage of children spending 20 to less than 50 hours in using personal computer per week from 23.7% in 2003 to 38.8% in 2012. There was also an increase in average duration from 14.6 and 27.9 hours per week to 18.5 and 30.1 hours in children group aged 10 to 14 and 15 to 24 respectively. In another survey on Internet education among parents of children aged 6 to 17 and adolescents aged 10 to 17 published in 2010, 70% of the children used the Internet on a daily basis and nearly 30% of them actually thought they had spent much or too much time on it.<sup>17</sup>

2.14 With the increasing popularity of smartphones and tablet personal computers as well as affordable data packages from different service providers, the time spent online via these products among adolescents has increased. In a recent survey on use of smartphones among adolescents aged 10 to 24 by the Hong Kong Federation of Youth Groups published in November 2013, 88.8% of the respondents possessed smartphones.<sup>18</sup> According to a survey by the DH conducted in December 2013 to January 2014 on use of Internet and electronic screen products among over 5,400 pre-schoolers, primary and secondary school students and views of their parents and teachers, almost all the adults, over half of the primary school students and over 90% of secondary school students possessed smartphones. About half of the secondary school teachers used smartphone communication application software, text messages or social networking sites to communicate with their students.<sup>19</sup>

2.15 According to this DH survey, the median age of starting screen time among pre-schoolers was as early as eight months old with television being most popular (78%) followed by digital video disc (DVD) (44%), tablet personal computer (38%) and computer(34%)with an average daily spent from 27 to 44 minutes. Around 19% of pre-schoolers played video games with an average of 27 minutes daily and the median starting age was 24 months. Over two-thirds of students (both primary and secondary) spent three hours or less daily in using the Internet and the same proportion of students spent three hours or less daily in using offline electronic screen products.<sup>19</sup>

2.16 Communication with others, sharing information, entertainment, gaming and leisure, searching information, learning and doing homework as well as killing time are the common reasons for using the Internet among children and adolescents.<sup>17-19</sup> The main reasons for offering screen time, including electronic screen products, to pre-schoolers by their parents are for entertainment, learning and soothing the children.<sup>19</sup>

2.17 Similar to overseas situation, there is a large gap in knowledge in using the Internet between parents and children especially in parents whose education level was no more than junior secondary.<sup>17</sup> According to a local research study on Internet education, almost all the children had Internet knowledge but nearly half of the parents with older children aged 14 to 17 had no knowledge in using the Internet.<sup>17</sup> Very few children self-reported to have been involved frequently in risky behaviour on the Internet such as meeting new friends or disclosing family information. Restriction was the commonest method of use by parents in supervising and guiding the children to use the Internet but nearly half of latter had been visiting websites without restriction at home. Other parenting methods including setting rules, involvement and close monitoring were also being used. Over a quarter of parents were not satisfied with their own ability to help their children benefit from the use of the Internet and to protect them from the threats.<sup>17</sup>

2.18 According to the DH survey, only 14% and 12% of the parents would always accompany their children in using tablet personal computer and computer respectively. Around half of the parents of school children considered their children had spent excessive amount of time on the Internet and affected their daily lives, and 64% of parents had always or occasionally quarrelled with their children due to use of the Internet or electronic screen products.<sup>19</sup>

2.19 Most of the adolescents were aware of Internet privacy and e-safety. Nearly half of them were aware of or had the knowledge on different tools or means to ensure e-safety but only one third had used any one of these methods.<sup>20</sup>

2.20 Students are aware of the adverse effects of going online on their health and other important tasks in life. According to the DH survey, 37% expressed that they had always or occasionally given up outdoor activities, 49% had always or occasionally had depleted sleeping time, 45%

had always or occasionally perceived their academic performance being affected due to use of the Internet or electronic screen products; 19% had always or occasionally had deceived their parents, friends or teachers on the time of going online.<sup>19</sup>

2.21 According to the DH survey, 88% of school teachers thought that they had students addicted to the Internet and only 7% of school teachers had been approached by students to seek help for the problem. On the other hand, 15% of students suspected themselves being addicted to the Internet and only 2% of all students had ever sought help for Internet addiction.<sup>19</sup>

2.22 With the assistance of the Hong Kong Council of Social Service and the Hong Kong Federation of Youth Groups, the DH organized four small group sharing sessions with school students and parents of students from March to April in 2014 to collect views on use of the Internet and electronic screen products.

2.23 Going online especially playing games was considered one of the most important relief from the heavy load of homework in school students, especially senior secondary school students. They could play with desktop computers, tablet personal computers or smartphones anytime and anywhere. Most of them started online for various activities including gaming, social networking and searching information from young age. From primary school students to senior secondary school students, gaming until midnight was very common especially during weekends and holidays. This created conflict constantly between parents and children especially senior secondary school students. Parents were expecting to see their children to do homework at night while the latter was taking a break from academic work after a long school day despite the angry reactions of parents.

*“We have already spent whole day in school, and doing revision and homework after school, what we are looking for is just a break after dinner, to relax after bath and play online games with group of friends....they (parents) only see us playing computer at night but when we are studying, they are at work and do not know.”*

*A Secondary Six Girl going to sit for Hong Kong Diploma of Secondary Education in May 2014*

2.24 Parents acknowledged the benefits of the new technology and believed it could facilitate their children in learning and realized the facts that their children needed to use the Internet to finish homework assigned by schools. Their main worries about their children in using the Internet were addiction, lack of self-control especially in playing online games, imitation of dangerous or violent behaviour of characters in these games, depletion of sleep time, affecting academic performance and rendering them to ignore other activities. On the other hand, adolescents also agreed that violent content should not be exposed to young children as it might lead to psychological distress to them. Despite the age restriction in many application software and online games due to violent or other inappropriate content, the usual practice among these children and adolescents were faking their birth year.

*“When I was young, I was so scared when I watched my elder brother playing those violent computer games...I think it is not suitable for young child to play those violent computer games.”*

*A Secondary Six Girl living in Tuen Mun*

*“...everyone is faking the birth year so as to gain access to these sites but the birth day and birth month remain true so goodies for birthday boys and girls can be obtained”*

*A Secondary Five Boy living in Yuen Long*



2.25 Students perceived their parents' knowledge in these new technologies was poor. They felt parents could not understand what they were doing online. Parents did agree this view as they also thought their children's ability in mastering the smartphone and other related products was much better than them.

*"(My child) can use the phone, I am totally ignorant in it."*

*A mother of a Primary One student*

*"I cannot learn that fast, and I don't know how to use computer, it is hard to be a role model"*

*A mother of a Secondary Four student living in Tai Kok Tsui District*

2.26 Parents were using different parenting skills in an attempt to restrict the children in using the Internet and other related products like smartphone, such as setting time limit of use, only allowed to use in weekends or holidays, forbidden actions such as switching off power or taking away the smartphone as well as accompanying the young child in using the Internet. As expected, the older the child, the less effective was the restrictive actions.

*"They can accompany me in browsing the Internet to keep me safe."*

*A junior primary school student living in Tai Kok Tsui District*

*"What can they do? They cannot stop me playing (smartphone). Take away my phone? I will fight hard with them. Beat me? I am old enough and they cannot win me"*

*A Secondary Two boy living in Fanling*

## CONCLUSION OF CURRENT SITUATIONS

2.27 More children are starting to use the Internet and electronic screen products at a much younger age both overseas and locally. Newer products like tablet personal computers and smartphones are becoming more popular especially among the young. With easier accessibility, children and adolescents are spending more time online. There is a knowledge gap between generations in mastering the new technologies rendering parents more difficult to supervise or restrict the use of their children in going online.



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## ***CHAPTER 3 HEALTH EFFECTS ON USE OF INTERNET AND ELECTRONIC SCREEN PRODUCTS***

- 3.1 Like two faces of a coin, the use of Internet and electronic screen products has benefits and risks to our health. This report focuses mainly on the adverse health effects so as to provide relevant information and recommendations on appropriate preventive measures.
- 3.2 Extensive search of information including literatures and reports from various authorities was conducted. Search engines including PubMed and Google, websites of authorities including World Health Organization, United Nations Educational, Scientific and Cultural Organization, National Health Service and governments including Hong Kong, Singapore, United Kingdom, Canada and Australia were browsed by typing in combinations of key words of the health system we studied such as “vision”, “musculoskeletal”, “physical fitness”, “injury”, “addiction”, “aggressive behaviour”, “cognitive development”, “learning” etc. with words like “Internet”, “net”, “screen products”, “screen time”, “computer”, “television”, “video games” etc. Papers of potential relevance were identified for further review. Further search of other relevant papers was conducted by linking the citations. References from local experts were reviewed, news reports from media were read, surveys and statistics collected from different authorities and organizations were marked for reference.
- 3.3 While the primary focus of information was put on adverse health effects, those health issues that might be positively or negatively affected by using Internet and electronic screen products e.g. cognitive development, information on both sides was included for a more balanced view.

- 3.4 Evidence on adverse physical and psychological health effects relating to use of Internet and electronic screen products was searched and collated. Information included meta-analysis, systematic reviews, reviews by reputable organizations, individual studies or reviews and significant others.
- 3.5 Since there had not been a lack of reviews conducted by various authorities or institutions, including some from reputable organizations, the Advisory Group studied and discussed this analysed information, where available, instead of going through the process of examining extensive amount of original studies. It is worth to remark that earlier studies with concrete conclusion were mainly focused on screen time spent on television. As discussed in previous chapter, viewing television programme is still important in the daily life of children and adolescents though they are watching television with various means, that are, different modern electronic screen products. Therefore, a robust assumption is made by extending the guidelines of various institutions based on television viewing to a boarder sense of screen time using new technologies.
- 3.6 Members of the Advisory Group made reference to the health concerns raised by the general community as reported in mass media, and through surveys and contacts with the target groups, i.e. children, adolescents, parents and teachers during various routine and ad hoc services and activities. The Advisory Group also made reference to the studies in overseas authorities in determining the topics of health concerns. Information on 14 health concerns was identified, grouped under physical health and psychosocial health. The list is not meant to be comprehensive or exhaustive but these are the areas with more concerns in the current context.
- 3.7 Available scientific information in various health topics varied in terms of quantity and quality. Research on the very young and on newer technologies was relatively limited. Evidence from well-designed studies or systemic reviews in some topics was also scant. Some of the

conclusion and recommendations from overseas were based on views of experts and consensus.

## PHYSICAL HEALTH

### Physical fitness and obesity

3.8 Screen time activities including watching television, playing video games and going online are very popular among children. Studies have persistently shown a directly proportional relationship between obesity and screen time.<sup>1</sup> Children logging over two hours of screen time per day are twice as likely to be overweight or obese than peers watching one hour or less per day.<sup>2</sup> Children tend to crave and eat sugary or starchy food during the day to provide energy to stay awake and they tend to eat snacks while sitting down to watch television or videos; and they are more likely to consume more ‘junk snacks’ as snacks advertisements appear far more frequently during children’s programme on television.<sup>3</sup> Healthy eating habit has to be established since early childhood. Sedentary activities such as television watching can disrupt healthy eating habits leading to higher energy intake and less fruits or vegetables consumption which may further aggravate overweight problem.<sup>4,5</sup> In examining television, digital video disc, video and computer use and metabolic risk, a study found that adolescent boys who spent more than two hours of screen time per day were more than twice as likely to have an increased risk of insulin resistance.<sup>6</sup>

3.9 Apart from obesity, access to and night-time use of electronic entertainment and communications devices are associated with shortened sleep duration, poorer diet quality, and lower physical activity levels.<sup>1</sup> Spending excessive time on electronic screen products may reduce children’s chances for physical exercises and outdoor activities which in turn adversely affect their health and development<sup>7-9</sup>, which will be further elaborated in other sections of this Report.

3.10 *The Advisory Group agrees that there is strong evidence to support proportional relationship between obesity and screen time. As this is more relating to sedentary lifestyle and other associated behaviour during these activities like snacking and decreased sleep time, recommendations should be focused on the encouragement and facilitation of physical activities and other healthy lifestyles.*

## **Vision**

3.11 Prolonged use of computer is found to be associated with Computer Vision Syndrome (CVS), a group of eye and vision-related problems that result from using computer for a prolonged period.<sup>10,11</sup> Two broad categories of symptoms exist in CVS. The first group, terms external symptoms, include burning, irritation, ocular dryness and tearing, and is related to dry eye. The second group, terms internal symptoms, include eyestrain, headache, eye ache, blurred and double vision, and is generally caused by refractive, accommodative or vergence anomalies. The most common symptoms are dry eyes, headache, eyestrain, neck and shoulder pain as well as blurred vision. The level of discomfort appears to increase with the amount of computer use and is only temporary and will decline after stopping computer work. However, if nothing is done to address the cause of the problem, the symptoms will continue to recur and perhaps worsen with future computer use.

3.12 Reviews in CVS show significant amount of computer users may experience CVS symptoms vision either at near or when looking into the distance after prolonged computer use.<sup>11</sup> In a local telephone survey on the prevalence and co-relates of computer vision syndrome conducted in 2010<sup>12</sup>, two-thirds of adult population had at least one of the above symptoms related to computer use.

3.13 The prevalence of dry eye is higher with longer periods of computer use, increases with age and is higher in women than men. Use of computer and smartphone with small text and image



size, poor viewing angle are associated with both a reduced rate of blinking and a high number of incomplete blinks when compared with viewing hard copy materials. Environmental factors producing corneal drying worsens the symptoms. Given the need to achieve and maintain clear and single vision of relatively small targets in the screen of computers or smart products, it is important that refractive errors like hyperopia, high myopia and astigmatic errors should be corrected to reduce the ocular stimulus to accommodation and minimize blur.<sup>10,11,13</sup>

3.14 Fixation on any near object for a sustained period of time, whether a computer screen or printed material may lead to eyestrain. Regular breaks at short duration help to reduce the symptoms.<sup>11,14,15</sup>

3.15 The United States Occupational Safety and Health Administration<sup>14</sup> and the United Kingdom Health and Safety Executive<sup>15</sup> provide clear and detailed guidelines on computer set-up in terms of screen distance, angle of vision, intervals of break and measures to reduce eye strain as poor workstation design includes improper illumination and glare coupled with high workload, postural demands, and job demands can contribute to shoulder, neck, back, and wrist-hand discomfort and pain, as well as fatigue for many computer users.

3.16 The underlying physiology of CVS still needs to be further studied. Currently there is no consensus on the proposed measurements or treatments to reduce these symptoms such as use of special lens and glasses or the specific durations of break and screen time.<sup>10,11</sup> Potential therapeutic interventions for patients with symptoms of CVS such as dry eye therapies with the use of lubricating drops, ointments and topical medications for blepharitis or allergic conditions; blink training to increase the blink rate during computer use, as well as changes in ambient humidity, hydration and redirection of heating and air conditioning vents have all been proposed. Use of appropriate glasses which cater for the screen distance may be helpful

especially in the presbyopia subjects. However, the benefit of many of these therapies for minimizing CVS symptoms is yet to be proven.<sup>11</sup>

3.17 Moreover, screen time nowadays starts in early age. Children should be stopped from viewing screen for a long time or at a near distance. Tired eyes will get dry easily and there will be accommodation problems. It may have negative effect on children's vision.<sup>16</sup>

3.18 There are concerns about the harmful effects of blue light emitted from the electronic screen products. However, up to date, there is no good study to provide convincing information on this area. Nonetheless, the potential damaging effect should be monitored and overuse of these products is not recommended.

3.19 *The Advisory Group agrees that prolonged use of electronic screen products will lead to eye and visual symptoms like ocular discomfort, eyestrain, dry eye, headache, blurred vision and even double vision. It is advisable to adopt measures like regular breaks with eye blinking, make reference to international occupational safety guidelines in computer set-up, choose to view with bigger text size and use stands for tablet personal computers and smartphones, and to maintain an appropriate visual distance with the screen. At present, there is limited evidence to conclude the long term adverse effects on eye and vision problems in relation to use of electronic screen products, but related studies should be observed continuously and overuse of these products is not recommended.*

## Musculoskeletal problems

3.20 A systematic review in 2011 showed persistent association between use of computer and pain on neck and upper extremities such as carpal tunnel syndrome, tension neck syndrome, wrist tendonitis, shoulder tendonitis and epicondylitis. The prevalence of symptoms increases with increasing hours of computer use. These are mostly self-limiting and their prevalence is associated with the duration of use of computers.<sup>17</sup> Proper set up of working station can help to reduce the strain on musculoskeletal system.<sup>14,15</sup>

3.21 The latest technologies allow going online in handheld products like smartphones and tablet personal computers which involves persistent use of index finger or the thumb to perform the touch functions. Even though the physical actions are very light, long hours of frequent repetitive actions could lead to excessive strains in the finger joints and tendons.<sup>18</sup> In some cases, due to excessive texting with mobile phones, inflammation of tendons and articular degeneration in the thumb joint and index fingers have been reported.<sup>18</sup> A local study by the Hong Kong Polytechnic University in 2013 showed that 70% of adults and 30% of children and adolescents had reported musculoskeletal symptoms in different parts of the body in relation to the use of electronic devices. There was 80% of school students regularly used smartphones; 50% used less than one hour and 30% used for one to four hours daily. Among the 29% of participating school students with physical complaints, 90% have shoulder pain, over 80% have neck pain, and 10% have wrists and finger pain.<sup>19</sup>

3.22 Systematic review failed to support a strong causal association between aspects of computer use and specific disorders of the neck and upper extremity musculoskeletal disorders yet.<sup>17</sup> Some researchers also proposed that stress, psychosocial factors, prolonged sedentary and frozen posture in any kind of concentrated work, not necessarily using computer, also attributed to the occurrence of muscle tension and disorders.<sup>20,21</sup> Moreover, most of the large

scale studies were conducted on use of desktop computers, there is limited knowledge about the disease patterns and symptom characteristics of the adverse effects on musculoskeletal system relating to the use of new products such as smartphones and tablet personal computers. General preventive measures like taking regular short and frequent breaks with physical activity to help in muscle relaxation are encouraged.<sup>14,15,21</sup>

*3.23 The Advisory Group agrees that prolonged use of electronic screen products in a fixed posture can cause or exacerbate musculoskeletal symptoms. It is advisable to adopt ergonomic measures and regular breaks with relaxation exercise to avoid over stressing the muscles. There is limited evidence at the moment to conclude long term adverse effects on the musculoskeletal health relating to use of electronic screen products, but related studies should be observed continuously and overuse of these products is not recommended.*

## Hearing

3.24 Due to the overwhelming popularity of smartphones and electronic screen products with built-in personal music players, exposure to loud sounds at leisure, especially among adolescents, increases. The effect on hearing depends on the sound level, duration of exposure and age of users.<sup>22</sup> An European report suggested that about 5 to 10% of listeners to personal music players are at risk of hearing impairment because they listen to sound levels that are too high, for too long a time.<sup>23</sup>

3.25 In a Netherlands study in 2007, 90% of secondary school students listened to music through earphones on MP3 players and one-third were frequent users, nearly half used high volume settings especially those frequent users and only one-seventh always or nearly always used a noise-limiter.<sup>24</sup> A study in the United Kingdom found that more than two-thirds of users of MP3 players were listening to volumes above 80 dBA.<sup>23</sup>

3.26 The total (cumulative) time limit for listening with earphones would be one hour per day and the average sound level should not exceed 85dBA.<sup>22,25-27</sup> Listening to sound level at or above 85 dBA for longer than 8 hours a day poses significant risk to hearing; same risk at 95 dBA for 15 minutes per day or 107 dBA for one minute per day.<sup>28</sup> The acoustic trauma damages the cochlear hair cells resulting in temporary or permanent hearing loss especially to high-pitched sound, tinnitus and difficult to understand others in a noisy environment in both children and adults.<sup>22,29</sup> In very young child, such damage can delay language development especially in speech consonants discrimination.<sup>29</sup>

3.27 Healthy hearing tips such as reducing the sound volume to less than 60% of maximum sound output, increasing the bass boost, using built-in function in devices to reduce volume differences between songs, reducing background noise with appropriate headphones can minimize the hearing risk.<sup>26-29</sup> Caution yet has to be noted to avoid using noise cancellation or reduction headphones when one is crossing the road or in busy streets as it will be dangerous if the sound of the vehicles cannot be heard.<sup>22</sup>

3.28 *The Advisory Group agrees that mobile electronic screen products with audio entertainment function could generate sound at harmful levels. Prolonged exposure to excessive sound levels generated by these products would result in permanent hearing damage. Healthy listening habits should be established at young age.*

## Injury and accident

- 3.29 Going online to communicate with other people or playing games is now possible anytime anywhere with smartphones which obviously distract users from noticing surrounding environment. Using a mobile phone and listening to music can distract the users and isolate them from their environment which can be very dangerous while driving or walking on busy roads.<sup>22,30,31</sup> A study in the United States also found that children's pedestrian safety was compromised when distracted by a cell phone conversation.<sup>30</sup> Another study using data from the US Consumer Product Safety Commission on injuries in hospital emergency rooms from 2004 to 2010 found that mobile phone related injuries among both pedestrians and drivers increased.<sup>31</sup> Such information gathered was relating to use of mobile phones and music players a few years ago. As the smartphones and related new products have even more functions available, i.e. which probably require more attention and skill to master, risk of injury and accident may increase. However, information on this aspect is limited.
- 3.30 There is an increasing alert to incidents of falling or straining in escalators in public areas such as train stations and malls due to the use of mobile electronic screen products. The Hong Kong Mass Transit Railway Company has recently produced a new animated video to remind passengers the potential dangers of careless behaviour on escalators, such as paying more attention to one's smartphone than one's personal safety.<sup>32</sup>
- 3.31 In the local Road Traffic Accident Statistics 2012 by the Transport Department, it was found that out of the total 20,210 accidents, listening to audio device and pedestrian inattentiveness were the casualty contributory factors in 2 and 511 accidents respectively.<sup>33</sup> Although there was no further details or breakdown of these casualty factors to provide information on whether it was related to use of smart products or mobile music players, yet public awareness on road safety especially when using these products should be reminded.

3.32 *The Advisory Group considers use of mobile electronic screen products while doing other tasks may relate to injury and accident. Public awareness and promotion on safe use of mobile electronic screen products to prevent injury and accident is recommended.*

## **Infection**

3.33 Mobile communication products, such as smartphones and tablet personal computers, have become one of the most indispensable accessories of social life in a great majority of population in Hong Kong especially the younger generations as already discussed in the previous chapter. These products are often held close to the users' skin and mucosal surface. Together with the increasing popularity of touch screen function, they are handled frequently and there is an increasing concern that spread of germs may occur via such products as a result of inadequate infection control measures. This issue had attracted media attention. A recent article reported in Wall Street Journal<sup>34</sup> showed concern on this hazard relating to the popularity of smartphones. Another article in Telegraph<sup>35</sup> stated that smartphones harboured more germs than the average toilet seat. Studies conducted in both hospital settings<sup>36</sup> and community settings<sup>37</sup> have also shown that mobile communication products may be contaminated by micro-organisms and potentially serve as vehicles of transmission of pathogens.

3.34 *The Advisory Group considers that there is potential risk to spread pathogens through the use of smartphones and other mobile electronic screen products. Awareness should be raised to the users to adopt hygiene precautions like hand washing and avoidance of sharing of such products between different users, especially with individuals who have symptoms and signs suggestive of active infections.*

## Health concerns relating to radiofrequency electromagnetic field

3.35 World Health Organization (WHO) has stated that the exposure levels due to wireless networks (including Wi-Fi) are generally very low, and there is no convincing scientific evidence that the weak radiofrequency (RF) signals from wireless networks cause adverse health effects.<sup>38</sup>

3.36 The Office of Telecommunication Authority conducted a local survey of RF radiation generated by Wi-Fi Installations in 2007 and subsequently additional measurements at other public locations including those on board public transport showed the RF exposure levels ranged from less than 0.03% to 0.3% of the limits as recommended in the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Exposure Guidelines, which has been adopted in Hong Kong for protection of workers and the public.<sup>39</sup> According to the survey, it is concluded that the non-ionizing radiation generated by Wi-Fi installations in public areas in Hong Kong is well below the international recommended limits.

3.37 In regard to the hypothesis that mobile phone use can cause brain tumours in adults, there remains some uncertainties but the trend in the accumulating evidence is increasingly against such hypothesis.<sup>40</sup> The Interphone Study, coordinated by the International Agency for Research on Cancer (IARC) under WHO is by far the largest case-control study of mobile phone use and brain tumours in adults. The IARC classified radio waves (along with coffee and car exhaust fumes) as “possibly carcinogenic to human beings” (Group 2B), i.e. limited epidemiological indications in relation to cancer.<sup>40</sup> To date, no adverse health effects have been established as being caused by mobile phone use. Sensible use of mobile phones includes limiting calling time, using earpiece and choosing a mobile phone with a lower specific absorption rate (SAR) value. It is worth noting that the SAR of all mobile phones available on the market must be tested against the ICNIRP guidelines (e.g. the official limit value in Europe is 2W/kg and the SAR of mobile phones available on the market is in the 0.2 – 1.6 W/kg range; most are 0.8-0.9 W/kg).<sup>41,42</sup>



3.38 While an increased risk of brain tumours is not established, the increasing use of mobile phone and the lack of data for mobile phone use over time periods longer than 15 years warrant further research on mobile phone use and brain cancer risk. This is particularly true because of recent popularity of mobile phone use among younger people and hence a potentially longer lifetime exposure. An international study, Mobi-Kids, which looks into the effects of use of communication devices and environmental factors and brain cancer in young people aged 10 to 24 years, is underway. The results will be available in 2015/16. Meanwhile, the Belgium government has set up new regulations with effect from 1st March 2014 to ban not only the sale of mobile phone specifically designed for the younger age group (under seven years of age) but also any advertisement of mobile phone use among this age group. Moreover, the SAR value of each mobile phone must be shown to allow customers to make an informed choice.<sup>43,44</sup>

3.39 In view of existing evidence, the DH of Hong Kong is of the view that, as a precautionary measure, the use of mobile phone by children for non-essential calls should be minimized.<sup>45</sup> Currently, the Government of the Hong Kong Special Administrative Region has adopted guidelines and code of practice to limit the emission of non-ionising radiation within specified radiofrequency and to ensure operation of relevant devices at a suitable distance.<sup>46,47</sup>

3.40 *The Advisory Group notes that there is no conclusive evidence at this stage to show that radiofrequency signals from wireless networks or mobile phones cause cancer in human beings. It is recommended to keep in view the latest scientific information for the health effects of wireless networks or mobile phone use in children.*

## PSYCHOSOCIAL HEALTH

### Addiction

3.41 Addiction to the use of the Internet and computer games has been a growing concern all over the world since the past decade or so. Although Internet addiction remains unlisted in the latest Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) in 2013, the American Psychiatric Association has listed “Internet gaming disorder” as a condition recommended for further study.<sup>48</sup> At the moment there are no formal, widely accepted criteria for defining Internet addiction. The criteria more commonly used by researchers are the Internet Addiction Test developed by psychologist Dr. Kimberly S. Young.<sup>49</sup> The problem users share many common risk factors of other abusive behaviours. According to the review by Shek et al, there are consistent empirical findings suggesting that Internet addiction occurs with other mental health problems like depression, anxiety, obsessive-compulsive disorder, impulsive-control disorders, attention-deficit/hyperactivity disorder, suicidal thinking, substance abuse and other addictive behaviour.<sup>50</sup>

3.42 While there are on-going debates on the clinical definition, causes, risk factors and treatment, research showed that some factors at family and interpersonal levels are associated with Internet addiction.<sup>50,51</sup> Family monitoring, family cohesion, positive parenting attitudes and good parent-child relationship are found to be protective factors whereas negative parental rearing style, family violence, parental marital problem, family dissatisfaction are the risk factors. Other personal characteristics like shyness, low self-esteem, lack of social and emotional skill and poor interpersonal relationship are associated with higher risk of Internet addiction.

3.43 Using Young’s Chinese Internet Addiction 10-item scale, a local study on over 3,500

Secondary Two students (mean age: 13.6 years old) in school year 2010-2011, 26.7% met the criteria of Internet addiction.<sup>52</sup> Likewise, using the same instrument, another study on 6,121 local Chinese primary and secondary school students aged 11 to 18 years showed that 19.1% of the students could be Internet addicted.<sup>53</sup> Since Internet addiction is not a psychiatric disease, most of the suspected or identified individuals are further followed up by social workers who will work on various approaches with the general principle of increasing protective factors and reducing the risk factors described above.

*3.44 The Advisory Group agrees that the increasing time spent by children on Internet and electronic screen products is a concern. While it is noted that more research and evidence are needed on Internet addiction, the Advisory Group considers that it is more important to prevent children from spending excessive amount of time on Internet and electronic screen products that would affect their other more important tasks or daily routine. Measures that help to increase the protective factors and reduce the risk factors of Internet addiction, which are also consistent with principles of positive parenting, should be promoted.*

## **Cyber-bullying**

3.45 Instead of one-to-one communication, the speedy one-to-many and many-to-many communications to include embarrassing information, photos or stories about someone through social networks and chat rooms make cyber-bullying more common and serious than offline world. The characteristic of covert identity of the perpetrators makes them more likely to engage in online bullying behaviour as they feel reduced responsibility and accountability.<sup>54</sup>

3.46 A critical review on cyber-bullying victimization found that victimization is associated with serious psychosocial, affective and academic problems.<sup>54</sup> Victims of cyber-bullying

consistently report academic problems in relation to the preoccupation with cyber-bullying experience. Depression is associated with the degree to which individuals experience cyber-bullying victimization. Psychosocial problems such as social anxiety and depreciated levels of self-esteem have been documented in victims of cyber-bullying.<sup>54-57</sup> Victims of cyber-bullying have lower self-esteem, higher level of depression and experience significant life challenges.<sup>56</sup>

3.47 The age at which teens are the most susceptible to victimization is 12 to 14 years of age.<sup>54</sup> Increase awareness among parents and teachers, inclusion of cyber-bullying prevention in conventional anti-bullying programmes, empowering schools to address cyber-bullying situations, and inclusion of cyber-bullying explicitly in school anti-bullying policies would be useful preventive measures.<sup>59</sup> Training should be provided to school teachers of upper primary and junior secondary classes, counsellors and school administrators for the detection and remediation of this social problem. Prevention programmes should be implemented prior to upper primary and Secondary One, before the frequency of cyber-bullying cases reaches its peak.

3.48 *The Advisory Group agrees that the characteristics of the current Information and Communications Technology make cyber-bullying happen more easily and has a more damaging effect. The association of the serious psychosocial consequences among victims of cyber-bullying is a concern. Early prevention programme involving the schools are recommended to be continued and further strengthened.*

## **Cognitive development and learning**

3.49 Screen media has become a common and popular platform for learning in both home and

school settings, through interactive mode or video game designs. There are numerous children's television programmes, videos, online application software and computer software having educational claims of promoting children's cognitive and language development. However, updated evidence from well-designed research is still pending.

3.50 The American Academy of Pediatrics considers that there is a lack of evidence to support the use of media in children younger than two years with educational or developmental benefits whereas there are potential adverse health and development effects.<sup>60</sup> It published a set of parental guidelines on screen time for different age groups including advice for children under age two should not watch television or other screen media at all, no more than one or two hours are recommended for children older than two years and so on and so forth.<sup>61</sup> This policy statement also reported negative effects of background television on the play and interaction of one to three year olds and their parents. Health professionals, educators, childcare workers and social workers can help relay information to parents and other caregivers regarding how television, even in the "background", may impede young children's language and cognitive development as well as the importance of engaging in parent-child interaction.<sup>60,62</sup> Parents generally spent more time engaged in object play with the older children and more time in non-object interaction with the younger children. Yet, the quantity and quality of parent-child interaction significantly decreased when the background television programme was on compared to when the television was off. Also, with the background television programme playing, the children engaged in fewer social behaviours and speech and their parents' responsiveness and language use significantly declined. Interactions that did occur tended to be of a more passive nature.<sup>62</sup>

3.51 However, it should be noted that the above conclusion on the lack of beneficial effects of screen media in learning in young children was based on the studies on background television

and adult-directed television and before the booming of the e-era when the applications with interactive activities made for the use of tablet personal computers and other electronic screen products were not yet available.<sup>62</sup> Whether these newly developed application software targeting at toddlers and young children have positive effects in language and cognitive development requires further studies before conclusion could be drawn. Between two and three years of age, more evidence emerges of the positive impact of video and interactive games designed for this age group.<sup>63</sup>

3.52 There are research looking at what skills older children in primary and secondary school learn through playing video games such as visual attention, reaction times, the development of cognitive skills e.g. spatial perception or strategic thinking, planning or hypothesis testing.<sup>64-66</sup> Evidence seems to show positive effects especially for older children but how long the brain effects last if the person stops playing video games need further studies.

3.53 Today, children and adolescents frequently use computers and the Internet for their schoolwork and parents generally believe that computer is an important educational resource. A literature review relating to the use of computer and video games for learning finds signs of both positive and negative effects.<sup>67</sup> On one hand, frequent players are less positive towards school.<sup>68,69</sup> Frequent gaming also reduces the time available for homework, which can negatively affect academic performance.<sup>69</sup> It has been found that academically unsuccessful boys spend more time playing video games than their high-achieving peers.<sup>68-70</sup> On the other hand, there are encouraging signs that game playing can actually benefit school performance.<sup>71</sup>

3.54 Gaming is said to help users to adjust to a computer-oriented society.<sup>72</sup> In action and adventure computer games, images tend to be more important than words; this shifts the development of representational skills from verbal to iconic, with players visually manipulating

images on a screen in different locations. In these ways players develop the spatial awareness and the cognitive skills that are crucial to many computer applications. Modern theories of effective learning suggest that learning is most effective when it is active, experiential, situated, problem-based and provides immediate feedback.<sup>73</sup> Games appear to offer activities which have these features, especially the touchscreen function in tablet personal computers can provide instant feedback for toddlers and younger children.<sup>74</sup>

3.55 *The Advisory Group agrees that there is currently no conclusion on the effects of learning with electronic screen products including video games in different age groups or use of media in young children under two years of age. The Advisory Group considers that use of Internet and electronic screen products may have other adverse effects on health and development, especially for children under two and children using these products without proper guidance or supervision. To help children have a healthy whole person development and enjoy the benefits brought by the new technology, the Advisory Group recommends parents to provide appropriate guidance and supervision. Parents should discourage children under two years of age to use Internet and electronic screen products.*

## **Social development**

3.56 Social skills are learnt from imitation starting at very young age. Face-to-face communication is strongly associated with positive psychosocial well-being and confers linguistic skills, along with the ability to have conversation.<sup>64,75</sup> This learning process is highly technical and time consuming. Regular eye-to-eye contact for optimal physical and mental health is fundamental to development of social and emotional skills.<sup>76</sup>

3.57 An earlier review showed that research findings were mixed regarding the effects of computer

use on children's social development.<sup>77</sup> With respect to interactions with peers, the effects of computer use appeared to depend on the type of activity engaged in and the amount of time spent in front of a screen. Moderate game playing did not significantly impact children's social skills and relationships with friends and family. However, concerns have been raised about the effect of excessive game playing on social development. It has been suggested that spending a disproportionate amount of time on any one leisure activity at the expense of others will hamper social and educational development.<sup>78</sup>

3.58 Although it is clear that the Internet is frequently used for social purposes by adolescents, it is not immediately obvious whether these social uses add to or diminish their stock of social resources. The influence depends in part on whether the social users of the Internet supplement or substitute for other sources of social contact that adolescents have. Email and the Internet may help maintain interpersonal communication and sustain social relationship. However, some research analyses have demonstrated that use of computer is associated with declines in social involvement and the psychological well-being that goes with social involvement.<sup>79</sup>

3.59 Analyses of longitudinal data from the HomeNet study found that as participants spent more time online, they experienced greater declines in social and psychological well-being.<sup>80</sup> In particular, greater use of the Internet was associated with small, but statistically significant, declines in social involvement as measured by communication within the family and the size of people's social networks, and with increases in loneliness, the psychological state associated with social involvement.

3.60 According to a report by American Academy of Pediatrics, preteens and teens who have spent a significant time in social networking sites is associated with "Facebook Depression" with classic symptoms of depression.<sup>81</sup> In a prospective longitudinal study in Canada, it was



reported that higher levels of early childhood television exposure predicted greater chances of peer rejection experiences such as being teased, assaulted, or insulted by other students.<sup>82</sup> Moreover, spending excessive screen time may reduce children's chance in parent-child interaction which is important in healthy development.<sup>83</sup> Although these studies suggested a linkage between use of the Internet and electronic screen products with social skill development of children, there were other confounding factors which might affect the interpretation of results. At the moment, there is still very limited scientific evidence to support this direct relationship.

*3.61 The Advisory Group notes the concern that spending too much time on Internet and electronic screen products may hinder the social skill development of children. While more research and evidence are needed on this aspect, the Advisory Group considers that it is more important for parents to facilitate the age appropriate social skill development of children e.g. cultivate more quality time and family activities involving face to face interaction, encourage and facilitate more participation in cooperative group activities.*

## **Sleep deprivation**

3.62 Quality sleep is essential for children's growth and development. Children going through puberty and adolescence need to sleep longer and deeper for the release of growth hormone and brain benefits by aiding the process of concentration as well as de-toxifying stress and adverse emotion.<sup>84,85</sup> Those who do not get enough sleep are more likely to be overweight or obese because they tend to crave and eat sugary or starch food during the day to provide energy to stay awake.<sup>3</sup> Younger children who are persistently sleep deprived seem irritable and overactive, seek constant stimulation and lack concentration.

3.63 A survey by The Sleep Council of the United Kingdom on 1,000 adolescents aged 12 to 16 years has shown that using computers, mobiles and televisions at night affects children's sleep and, therefore, their health, mood and performance at school. One in three participants slept for just four to seven hours a night. Nearly one in four of the children surveyed admitted they fell asleep more than once a week while watching television, listening to music or during other technical distractions.<sup>86</sup>

3.64 In a recent local sleep education and intervention programme “Healthy Sleep, Healthy School Life” conducted by the Chinese University of Hong Kong on 4,456 adolescents from 14 schools in Hong Kong during the period from December 2011 to May 2013 (unpublished article), it was found that 58.4% of them rated themselves as having insufficient sleep.<sup>87</sup> During weekdays, majority of the participants (94%) did not acquire nine hours of sleep daily as recommended by the World Association of Sleep Medicine; and 25% of the total participants had less than seven hours of sleep. It is also noted that the biological clock of adolescents makes them awake until late night.<sup>88</sup>

3.65 Peer pressure and social factors, including the increase in entertainment equipment in the bedroom, are making it increasingly difficult for children to sleep well. Bedrooms are changing from a place of rest and tranquility to places where there are lots of things to keep children awake, such as computers and televisions. Children are often tempted to take their mobile phone to bed with them and start texting without their mum and dad knowing. This distraction means they are not in a relaxed state for good-quality sleep, which can affect their learning. Firm night-time limits on the use of television, mobile phone or computer in their bedroom should be imposed.<sup>84,85</sup>

3.66 *The Advisory Group agrees that excessive use of smartphones and electronic screen products*

*relates to sleep deprivation which affects growth and development in children and adolescents. Sleeping guide should be advised including establishment of a bedtime routine, suggested sleeping time for different age groups, parenting skills and setting up of stimulation-free and comfortable sleeping environment.*

## **Online sexual risky behaviour**

- 3.67 With the rapid development of the Internet, access and exposure to information with sexual content is becoming very easy. While the Internet may serve as a convenient platform for obtaining useful information on sexuality and sexual health e.g. sex education, promotion for sexual health, etc., it is not difficult to find sexual information with inappropriate content in the Internet. Sharing or receiving materials with sexual content is not uncommon.
- 3.68 As part of the developmental characteristics, adolescents are prone to engage in risky behaviour. There are growing concerns that some adolescents may engage in online sexual risky behaviour including searching for pornography materials, sending or receiving sexually explicit messages or images i.e. sexting, communicating with strangers on sexual matters, searching for sexual partners online such as engaged in compensated dating, etc.
- 3.69 Studies have shown that adolescents engaging in online sexual risky behaviour are associated with a number of adverse psychosocial and mental health issues. Exposure to sexual content, creating high-risk social networking profiles, and receiving online sexual solicitations are found to be predictors of subsequent offline meeting.<sup>89</sup> Adolescents involved in online sexual activities have greater likelihood of being involved in early onset of sexual intercourse and multiple sexual partners.<sup>90</sup> Engagement in online sexual risky behaviour may lead to unwanted online sexual solicitations, online harassment, or the misuse of personal information.<sup>91,92</sup>

Moreover, adolescents who reveal personal information easily are vulnerable to online predators and could become victims of subsequent sex crime.<sup>93</sup>

3.70 In a study among middle school students in the United States, correlations were found between sexting and risky sexual behaviours (multiple sex partners, sexual intercourse without contraception), substance use behaviours, emotional health behaviours, and victimization of physical abuse or cyber-bullying.<sup>94</sup> Teenagers who sexted were more likely to be sexually active and engaged in unprotected sex than those who did not sext<sup>95</sup> and girls who sexted by sending own naked photos had higher chance of having risky sexual behaviour with multiple sexual partners and using alcohol and drugs before sex.<sup>96</sup> In a systemic review involving studies on both adolescents and adults, similar findings were also reported.<sup>97</sup>

3.71 Online sexual risky behaviour and offline sexual risky behaviour were found to be related. This may represent a constellation of high risk behaviours in the adolescents who are already predisposed to psychological and social risk factors. Only a minority of adolescents showed sustained high online sexual risky behaviour. This group is likely to consist of low-educated, high-sensation seeking adolescents who spend more time communicating on the Internet and come from less cohesive families.<sup>98</sup> More attention and educational programmes should be targeted to the at-risk group of adolescents.

3.72 *The Advisory Group considers the increasing popularity of Internet use may render adolescents easier to engage in online sexual risky behaviour, especially the vulnerable ones with psychosocial risk factors. Such behaviour may be associated with other adverse psychosocial or mental health problems. Parents, teachers and professionals working with adolescents should be aware of such behaviour in adolescents.<sup>99</sup> Awareness and education programme to address this issue are recommended to be further strengthened.*

## Aggressive behaviour

3.73 Whether or not video games with violent content would cause aggressive behaviours in players, especially in the younger children and adolescents, has long been a hot debate topic. A meta-analytic review found that exposure to violent games is associated with increased aggressive behaviour, aggressive cognition, aggressive affect, decreased empathy and prosocial behaviour in male and female as well as in both Western and Eastern countries.<sup>100</sup> However, causative effect and a persistent one is yet to be proven. A marginally significant age effect was noted in the same review suggesting that children might be more susceptible than young adults to violent video game effects. Other researchers disagreed this conclusion as the effect was not persistent in all studies reviewed and that the severity of aggressive behaviour was not clearly defined in the studies being reviewed.<sup>101</sup> More research specifically targeted to this question would be needed. Another study on Internet use and video gaming in adolescents found that online gaming, communicational Internet use and playing first-person shooters were predictive of externalizing behaviour problems like aggression and delinquency.<sup>102</sup> However, the size of the effects may not be sufficient to have practical negative consequences and violent video games alone are unlikely to turn a child with no other risk factors into a maniacal killer.<sup>65,102</sup>

3.74 In her review report, Byron remarked that children learn by imitation and expectation of children and adolescents about the world might be changed by what they see and experience online or in video games which violent scenes with killing and deaths bring success with rewards. The negative impact would be even greater for those who are already vulnerable in offline world.<sup>64</sup> After reviewing with her panel on the available evidences, realizing that hard evidence might not be easily achieved due to the many confounding factors affecting one's behaviour, Byron concluded in her report that relatively small and short-term effects of playing violent video games on young children's behaviour and attitudes had been demonstrated, but many questions remained about how to interpret this at individual level or it's meaning for

behaviour and attitudes in the real world.

3.75 *The Advisory Group considers that violent content of the video and online games would have adverse effects on the behaviour of children. Parents should choose appropriate video games for their children and give them relevant guidance. Information and measures to help parents and children choose such games e.g. censorship, rating system, parents' guides would be helpful.*

## OTHER CONCERNS

3.76 The Advisory Group notes that there are other areas on the use of Internet that may not directly relate to the health aspects but are important concerns for the development and well-being of children and adolescents e.g. cyber-safety, crime and legal matters. The Advisory Group also notes that there are lots of information and recommendations on these areas and acknowledges that these are important issues. General comments and suggestions regarding these concerns are provided as follows.

### Cyber-safety

3.77 Cyber-safety refers to safe and responsible use of ICT. Children and adolescents should learn about the associated risks and the corresponding protective measures against such risks.

3.78 Online users always need to give their personal information on many websites for different purposes. Before putting any information online, users should check the site's privacy statement, how they are going to use this personal information and how they will handle the account and password.<sup>103</sup> In developed countries, shopping in the Internet is convenient and is increasingly popular. Security in payment must be adopted to avoid credit card and other personal information theft.

3.79 Search engines allow matching of relevant information of an individual easier within a short period of time. Postings in social networking sites, photos with details showing personnel particulars like uniform with school name, home address, location map showing one's whereabouts allow others to track an individual easily. This is of utmost importance to avoid, or think carefully before exposing these data when using the Internet. In the report "Advice on Internet safety 1.0", 12% of children had experienced data misuse such as identity theft or somebody using their personal information in a way they didn't like.<sup>104</sup> Children and adolescents should learn how to protect their privacy once they start using the Internet. Data misuse by others can cause great emotional distress.

3.80 After the publication of the "Safer Children in a Digital World"<sup>64</sup> in 2008, the United Kingdom Council for Child Internet Safety was developed with a group of more than 200 organizations across Government, Industry and Education who work collaboratively to keep children safe online. A code of practice drawn up by Internet Service Providers about parental controls, advice for industry on e-safety messages, social networking, moderation and chat as well as collation and commissioning of a large body of e-safety research. Cyber-safety has to be a mandatory item in the education curriculum, to be starting in primary schools when students start to use Internet extensively for academic, entertainment and other purposes.<sup>104</sup>

3.81 Cyber-safety is an important issue. Public should be given more information and the conjoint effort from different stakeholders should be called to secure the safety of children and adolescents in the cyber world.

## Digital footprint

3.82 Digital footprint refers to a trail of data that is done by a person in the online environment.

Children and adolescents should learn that anything they have done in the net will shape how they are perceived by others now and in the future.

3.83 Parents create digital footprint profiles of their children since pregnancy by uploading the ultrasound pictures, photos of early infancy period, every single “first” experience and further commentary as the children grow in their own social networking sites.<sup>106</sup> Although these postings are intended to share the joy of the special moments of their children with friends and families, such materials will be staying in Internet for a long time. Children may not be happy with their digital profiles created by parents, without their permissions. Parents should be aware of protecting their children’s privacy in this matter.

## Legal issues

3.84 Statistics show that there has been a significant increase in computer and Internet based crime.

In 1993, the Police handled just four cases of computer crime, but this was increased to 3,015 cases in 2012.<sup>107,108</sup> Examples of computer related crimes include botnets, website defacement, Internet fraud, online theft, illegal materials etc. The problem has become a major public concern and education is the key to prevention. Public have to be aware of IT security and equip oneself with protective measures against computer crimes.

3.85 Apart from the risk of becoming victims of cyber-crimes, one must also beware of breaking the laws or regulations related to Internet behaviour such as law against unauthorized access, criminal damage, copyright infringement, objectionable materials etc. The Internet contains a lot of information in the form of text, images, music, games etc. It is not uncommon for



children and adolescents downloading, sharing or replicating these materials for their homework or entertainment purpose. They should be aware of the copyright issue and the ownership of these materials gathered from the Internet.<sup>109</sup>

3.86 Parents and teachers should guide them to use the Internet properly, to enrich their knowledge on laws and regulations relating to online behaviour including the Copyright Ordinance, Crime Ordinance and Control of Obscene and Indecent Articles Ordinance.<sup>110-112</sup>

3.87 There are harmful materials making available in Internet and social network sites. Accessibility should be limited by restricting downloading from indecent sites by underage and the use of social networking without parental companion.<sup>109</sup>



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## ***CHAPTER 4 RECOMMENDATIONS***

4.1 Recommendations including general principles, detailed tips on health concerns as well as practical advice to address commonly encountered scenarios relating to use of Internet and electronic screen products are prepared in this Report, which aim to provide useful references for primary school students, secondary school students, their parents and teachers. The objectives of these recommendations are to prevent adverse health effects, decrease access to harmful materials, increase resilience to risky, addicted or problematic behaviour as well as to improve parent-child relationship. The ultimate goal is to enable the younger generations to enjoy the benefits brought about by the Internet and new technologies.

### **GENERAL PRINCIPLES**

4.2 Based on information from literature search as well as resources from overseas and local organizations and authorities, the Advisory Group notes that there are some common general principles in helping children and adolescents in healthy use of Internet and electronic screen products.

#### **General principles for parents and teachers**

4.3 The basic key for parents and teachers to help children and adolescents is to establish good relationship. With good relationship and support as the foundation, it would be much easier to adopt different age approach means to guide and help the young. Parent education is essential. This includes education on the facts and potential positive and negative impacts of screen use, aspects which parents often overlook and effective means to control as well as to intervene children and adolescents on use of screen. Above all, it is important to emphasize on quality time between parent and child/adolescent as a powerful way to reduce screen time.

- 4.4 Teachers play an important role in equipping students' necessary skills and guiding them proper use of Internet and electronic screen products, developing them into responsible digital citizens, enhancing their awareness of the risks of harmful online behaviour, teaching them ways to protect themselves against the potential risks; so that they can enjoy the benefits of ICT advancement safely and healthily.
- 4.5 The general principles for parents and teachers are similar. They are to help and empower children to develop awareness and self-control for healthy use of Internet and electronic screen products, so that the children can gradually equip relevant knowledge and skills to be self-regulatory. Parents and teachers need to educate children about the potential negative effects and ways of preventions of inappropriate use of these products. Parents may adjust their degree of supervisions and delegate autonomy to their children according to their maturity and demonstrated self-control of usage. Pre-school and primary school children should be disciplined by restriction. However, when they enter adolescent stage, they are more impulsive, likely to engage in risk taking behaviours and longing for socialization. If parents remain to use restrictive strategy, they will rebel and evade.
- 4.6 Recommendations for parents and teachers aim to help them realize the needs of the children, take into account children's individual strengths and vulnerabilities, understand how children learn and change as they grow up so as to increase the protective factors and decrease the risk factors of children being addicted to the Internet and electronic screen products.
- 4.7 General principles for parents and teachers putting together will form an acronym of

**SAFE ACTS**

Show	Agree
Aware	Communicate
Facilitate	Trust
Empower	Seek

#### 4.8 *Show*

Parents and teachers should show children the right attitude in using Internet and electronic screen products and be role models. If parents and teachers are technically competent, they should also show the children how to master the technology, how to enjoy the fun and benefits and how to avoid the risks and traps. Behaving in the ways we promote and teach the youngsters to follow facilitate our first-hand encountering of possible obstacles, accumulation of practical experiences and valuable sharing with them later. Understanding, acceptance and appreciation of the children may also be enhanced after gaining some experiences of the challenges that the children may face.

#### 4.9 *Aware*

In order to better communicate, understand and guide the young in using the Internet and electronic screen products, parents and teachers should be aware of the functions of the technology, its benefits, potential traps and possible adverse consequences. They may not need to know the details, but should be aware of the characteristics and areas of potential harm arising from the common applications of the technology. With the fast development of technology, an obvious “generational digital divide”<sup>1</sup> is unavoidable. Parents, and sometimes even the teachers, may feel that they are not competent to manage risks in the cyber world in the same way that they do in the real world. They are advised to be aware of the resources in the community to keep themselves updated of the technology.

4.10 Parents and teachers should also be aware of the content of the websites or games that the children are using so as to better guide the children to avoid or reduce the possible risks. In particular teachers are advised to keep updated with the laws which govern offences of the Internet-related crimes so as to educate their students about these legislations.

4.11 With the advancement of technology, sharing of information and group communication

becomes very convenient. Some teachers may make use of the technology and related applications to communicate with students and parents as well as joining their cyber social network. However, there may be potential role conflicts and may lead to cyber-bullying of the teachers by students. There are guidelines from overseas authorities recommending the teachers not to use personal social networking account to communicate with students and their parents.<sup>2-5</sup> Teachers should be aware of the possible adverse consequences when engaging in this kind of communication.

#### 4.12 *Facilitate*

Parents and teachers should facilitate children to adopt a positive manner in using Internet and electronic screen products. For instance, giving clear guidance, granting permission and expressing appreciation for their appropriate use of these new technologies can reinforce their proper behaviours. Besides, helping children explore and develop other interests and hobbies, such as sports and performing arts with their healthy peers in their daily routines, gradually cultivates a more balanced life for them. Assisting them to join relevant training courses, community sport clubs and extra curriculum activities at school can expand their life exposure and reduce their sole reliance on electronic entertainments. Parents and teachers should support and show appreciation to children for not just their academic performance but also their non-academic achievements so that multiple sources of esteem development and social recognition of their children can be established.

#### 4.13 *Empower*

Age-appropriate empowerment is very important, especially for adolescents who are in the transition period from childhood to adulthood. Prohibition or restriction of use is only useful for young children in a short period of time and it is impossible and inappropriate when children grow older. Adolescents are learning to work independently and should be empowered

to face different challenges and risks in life. Like many other activities, using the Internet and electronic screen products have a lot of benefits but not without risks. Guiding, coaching and empowering the young through basic life skills training to increase their ability and resilience, to polish their communication ability, to help them think critically and to achieve their life goal are essential. They should be equipped with necessary skills in safely and healthy use of these new technologies.

#### 4.14 *Agree*

Parents and teachers should discuss and agree with the children some rules in using Internet and electronic screen products, e.g. duration of use, prohibition of use on certain occasions such as pre-examination period, etc. Teachers should also adjust the homework requirement in using e-communication with the students, e.g. restrict the time of e-communication. In all these agreements, the involvement of the children in setting the rules are important.

#### 4.15 *Communicate*

Parents and teachers should adopt an open, caring and non-judgmental communication with the children regarding the use of Internet and electronic screen products. They should understand the concerns of the children and try to discuss with them the pros and cons of using these new technologies. Sharing of personal experiences with children enhances reciprocal communication and mutual understanding. Children are prompted to tell more when parents and teachers are open to express their personal experiences. In fact, genuine care and human sharing are gratifying in nature and can help to establish satisfactory and harmonious relationship.

#### 4.16 *Trust*

Parents and teachers should trust and respect the young through guidance and open communication. They should also try to gain trust and respect from the young. Understanding their demands and needs is the key to gain this trust. This is also very important for empowerment. Platform for frank communication should be established and a positive attitude is encouraged. Trust may be established on the basis of demonstrated performance. Parents in particular can observe and review their children's practice. Greater autonomy may be delegated when children have demonstrated satisfactory self-regulatory abilities over a period of time. To teachers, these new technologies are updating in a quick pace that while they are teaching their students, they are also learning from different resources to the latest relevant facts. All parties are in the phase of constant learning and sharing.

#### 4.17 *Seek*

Parents and teachers should seek help from experts and professionals if the children are having problems with using the Internet and electronic screen products e.g. addiction, cyber-bullying, or being cyberbullied, etc. which cannot be managed properly by parents and teachers.

## General principles for children and adolescents

- 4.18 Children and adolescents are constantly pushing boundaries, appealed to risky tasks, and this is how they develop to adults. Cyber-safety is not about restricting their access but to empower them to keep themselves safe. While they are developing their technology skills, parents and teachers must also guide and help them develop their critical evaluation skills in par so they can make wise decisions. Children in Hong Kong are under sustained and substantial pressure within the family while growing up as most parents and children share a strong belief that a desirable career and bright future can only be achieved through brilliant academic results. Recognition of their achievements in other aspects is mandatory in boosting their self-esteem and self-confidence. Balanced life style must be encouraged for all age groups of children and adolescents for social development, built up of strong physical health and establishment of resilience and good mental health being; as well as to prevent obesity, avoid sleep deprivation and addiction to Internet games.
- 4.19 In view of the diversity of areas and age targets (from 0 to 18 years), priority of focus and specific actions will need to be set with different focus of area for corresponding ages of the children and adolescents at different times. For instance in pre-schoolers, the aim and focus should be on the healthy use of screen time. This will be in line with contemporary research and advocacy. It will be essential to alert parents of toddlers and pre-schoolers on the potential long term negative impacts on health and development of ignoring human interaction and physical activities especially outdoor ones for this age group. Details will be further elaborated in the section on “Practical Advice” in the later part of the chapter.
- 4.20 General principles for children and adolescents form an acronym of DARES. A word specifically chosen to meet the needs of youngsters who in general are enjoying in taking challenges and expressing to the world their ability to do so.



Development  
Awareness  
Respect  
Effective communication  
Seeking help

#### 4.21 *Development*

Children and adolescents should develop a variety of interests and hobbies and have a balanced life, including physical activities. They can participate in different kinds of group activities in real life and learn how to manage time and set priority. They should learn to develop technology skills, health awareness, and self-control in using the new technologies. It is important for them to make positive use of Internet and electronic screen products by developing positive and good manner and choosing appropriate content under the guidance from parents and teachers.

#### 4.22 *Awareness*

Internet, electronic screen products and the related technologies bring a lot of fascinating experiences to the daily lives of the young. However, children and adolescents should be aware of the potential risks and traps in the use of Internet. They should learn the ways and means to reduce the risks and minimize the harmful effects such as measures to avoid leaking personal information in Internet, and to safeguard themselves against any danger or uncomfortable situation on the Internet, so that they can gradually become independent and self-regulatory.

#### 4.23 *Respect*

Children and adolescents are easily attracted by the fascinating side of the new technologies but are usually less aware of the adverse potential. While parents and teachers are trying to guide and assist the young in the safe and healthy use of the Internet and electronic screen products through various means, they should trust and respect the guidance and effort of their parents and teachers, and are encouraged to share their feelings with adults through open communication. They should also respect other users and avoid bullying others with or without intention. They should be reminded of good manner especially when using social networking sites.

#### 4.24 *Effective communication*

Children and adolescents are encouraged to share their world in the Internet with their parents, as with their peers and friends. They should let their parents know how and why they enjoy using the Internet and electronic screen products. They should share their feelings, joys and concerns with their parents. Communication skills with parents and others in real life including eye contact, and to seek their help when encountering unpleasant materials, work together on setting ground rules in using the Internet and electronic screen products, co-view and discuss on the content of the websites are also important.

#### 4.25 *Seeking help*

Children and adolescents should seek help from parents and teachers if they come across problems such as being cyberbullied. They should also seek advice from experts and other professionals when they encounter matters that they are of concerns, e.g. obscene and indecent materials, violent content, addiction, etc.

## HEALTH TIPS

4.26 Further to the discussion of health effects on physical and psychosocial health as well as the general principles of recommendation, and taken into consideration the scientific information and recommendations from overseas professional authorities and local context, the following 10 tips are prepared to provide more detailed advice on some areas of concern. Noting that the use of Internet and electronic screen products could bring various benefits and convenience to our daily lives, the health tips aim to serve as reference to encourage healthy use of the technology and minimize the potential harmful health effects that may be related to its use.

### 1 *Be physically active, go outdoor* <sup>6-11</sup>

1.1 Consecutive use for more than one hour of Internet and electronic screen products including smartphones, tablet personal computers, video games, or televisions is discouraged.

1.2 Physical activities are encouraged:

1.2.1 Pre-schoolers: Accumulate at least three hours physical activities daily

1.2.1.1 Under 2 years old: Parents can give more opportunities for motor activities by allowing toddlers to run and walk instead of being carried or riding in a baby stroller.

1.2.1.2 2 to 6 years old: Parents and teachers should encourage play, stretching, aerobic, muscle strengthening and group activities daily. At home, light intensity activities (e.g. playing with toys, dressing up, packing school bags, etc.) on top of more vigorous ones (e.g. brisk walking, riding tricycle, playing hide-and-seek, etc.) are the range of activities good for young children's health and growth.

1.2.2 Primary and secondary school students: Accumulate at least one hour of moderate- to vigorous-intensity physical activity daily

1.2.2.1 Moderate-intensity physical activities: swimming, cycling or playing volleyball, etc.

1.2.2.2 Vigorous-intensity physical activities: playing basketball, football or rope skipping, etc.

## **2 *Engage in interactive activities in real life***<sup>12-16</sup>

2.1 Play time and talking between children and parents, especially for younger children, is encouraged for emotional bonding and social development.

2.2 Group activities are encouraged for development of social and communication skills as well as emotional management.

2.3 Parents and teachers are encouraged to appreciate and acknowledge the importance of non-academic achievements in the holistic development of children and adolescents.

## **3 *Limit screen time and choose screen activities wisely***<sup>6,10,15-17</sup>

3.1 The following suggestions on screen time for children and adolescents are recommended.

3.1.1 Pre-schoolers:

3.1.1.1 Under 2 years old: Avoid screen time as far as possible. Parents should spend as much quality time with children as possible to replace screen time in order to promote the cognitive, physical, social and emotional development of children. In any case, children should not be left alone with the electronic screen products.

3.1.1.2 2 to 6 years old: If electronic screen products have to be used, screen time should be limited to no more than two hours a day and under the guidance and supervision by parents or teachers.

3.1.2 Primary school students:

3.1.2.1 6 to 12 years old: Limit recreational screen time to no more than two hours a day. Set rules to help children build up time management skills.

3.1.3 Secondary school students:

3.1.3.1 12 to 18 years old: Adolescents should be trained to develop good time management skill and self-discipline to work independently and prepare themselves to be responsible adults. Prolonged screen time should be avoided. Regular breaks should be adopted if prolonged screen time e.g. for academic purpose, is unavoidable.

3.2 Interactive games and applications, chosen or approved by a parent, and playing together with parents is preferable to passive watching of television and video programmes.

3.3 When watching television and video programmes, parents are advised to watch and discuss the content together with children to offer guidance.

#### 4 *Blink, break and rest* <sup>18-22</sup>

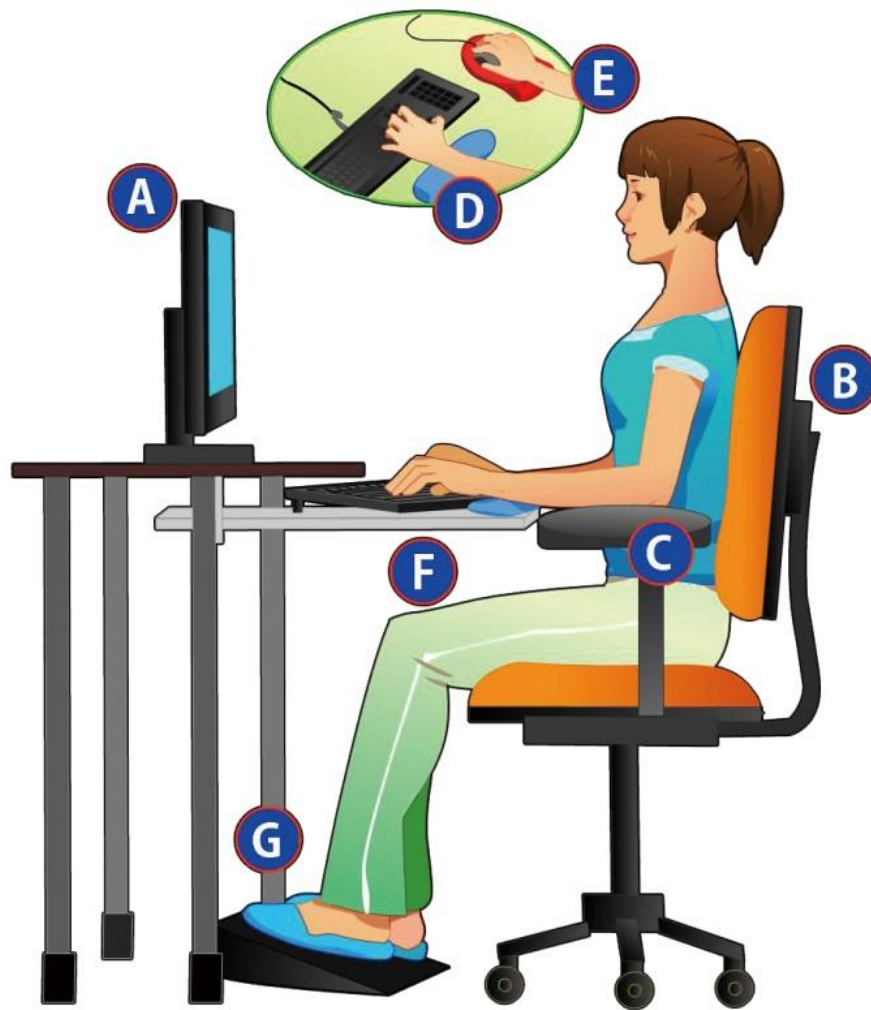
4.1 Change position, blink eyes and look at far distance frequently while using electronic screen products.

4.2 Intermittent breaks should be allowed after 20 to 30 minutes of screen use and rest for 20 to 30 seconds; or whenever feeling tired. During breaks, far distance viewing, full eye blinking, muscle relaxation exercise especially on neck and shoulders, hands and wrists should be carried out. Physical activities such as stretching and short walk around or across the room are encouraged during breaks.

- 4.3 Short and frequent breaks are better than long and infrequent ones.
- 4.4 Regular vision check to ensure normal eye and visual health. Wear glasses, if required, when reading an e-book or viewing from the electronic screen products.

## 5 *Adopt proper setting*<sup>19-23</sup>

- 5.1 Ensure that room lighting is sufficient, even and stable. Adjust curtains or blinds to prevent intrusive light and avoid screen directly facing windows or bright lights.
- 5.2 Adjust the angle of the screen or apply an anti-glare screen protector to reduce the glare off the surface of the electronic screen products.
- 5.3 Adjust brightness and contrast of the screen based on the current surroundings to avoid strains on eyes. Use the built-in “auto brightness” feature to help regulate brightness of the screen of the product, if available.
- 5.4 Choose font size and colours that are easy on eyes. Select word and line spacing to a comfortable level.
- 5.5 Adjust workstation for desktop or laptop computer with comfortable chair and table with appropriate height so that:



- A. Eyes should be slightly above the top of the screen and no less than 50 cm from the screen.
- B. Sit upright and close to the desk.
- C. Forearms should be approximately horizontal and supported by the desk. A space in front of the keyboard to allow hands and wrists to rest when not typing.
- D. Keep wrists straight when keying.
- E. Position a mouse within easy reach so it can be used with a straight wrist.
- F. Legs should have room to move under the desk.
- G. Choosing a chair with round edge or curved cushion seat can avoid excess pressure from the edge of seat on the backs of legs and knees. A footrest may be helpful especially for children.

5.6 Use stands for tablet personal computers and smartphones to allow appropriate visual distance and reduce pressure on wrist. Keep reading distance

5.6.1 No less than 50 cm from the screen of a computer.

5.6.2 No less than 40 cm from a tablet personal computer or e-book reader.

5.6.3 No less than 30 cm from a smartphone.

## **6 *Protect hearing, prevent accident and pay attention to hygiene*** <sup>24-31</sup>

6.1 When listening to music or other sounds with earphones (including MP3, MP4, smartphones), the following points should be noted:

6.1.1 Earphones should be set at the lowest possible volume which is both audible and comfortable.

6.1.2 Prolonged use of earphones should be avoided to prevent accumulative noise induced damage. Take regular listening breaks from earphones to give ears a rest.

6.1.3 Adopt the 60 – 60 Rule: Listen at no more than 60% of the mobile product's maximum volume for less than cumulative 60 minutes a day

6.1.4 If supra-aural headphones (earphones that rest on the pinna of the ear) and ear-buds (small earphones that rest loosely on the entrance of ear) are used, the volume should be set even lower.

6.1.5 Impulse sound (with sudden rise and fall of noise level e.g. shooting, hammer, and firecracker in video games) and fluctuating sound (with drastic change of noise level change drastically over time, e.g. road traffic noise, rock music) are more damaging than continuous noise with the same sound level. Adjust the output to a lower volume setting for music / game/ film that include impulse and fluctuating sound.



- 6.1.6 Never try to drown out the background noise with the music from the earphones. Instead, try noise reduction earphones so one can listen clearly with a low volume dial which is safe and comfortable. However, do not use these earphones while on street as it would be dangerous if the user cannot hear the sounds from the vehicles.
- 6.1.7 Use the built-in “smart volume” feature which help to regulate the volume and cap the possible maximum output in the products, if available.
- 6.2 Avoid using mobile electronic screen products while doing other tasks requiring attention e.g. crossing the roads or using escalator, etc.
- 6.3 Public education should be started early in schools once children start to learn to use this technology and the products to avoid injury and accident.
- 6.4 Clean the surface of the screen regularly according to manufacturer’s instructions to maintain a clear and clean screen.
- 6.5 Avoid sharing the electronic screen products with others, especially those with active symptoms of infectious diseases.
- 6.6 Wash hands regularly after using these products.

## **7 *Ensure adequate sleep time and appropriate environment***<sup>32-36</sup>

- 7.1 Adequate sleep time is essential for health. Babies and toddlers need two to three short naps in the daytime while three to five years old may need at most one daytime nap. Total amount of sleep in a day is different for different age groups:
  - 7.1.1 Newborns (up to 2 months): 12 to 18 hours
  - 7.1.2 Infants (2 to 12 months): 13 to 15 hours
  - 7.1.3 Toddlers 1 to 3 years old: 12 to 13 hours
  - 7.1.4 3 to 5 years old: 11 to 13 hours
  - 7.1.5 5 to 12 years old: 9 to 11 hours

7.1.6 12 to 18 years old: 8.5 to 9.5 hours

- 7.2 Encourage a quiet, dim and comfortable sleeping place. Turn off the computer and keep other electronic screen products out of reach during sleep.
- 7.3 Establish a soothing pre-sleep routine with a period of relaxing activities an hour or so before bed, e.g. take a bath, read a book, avoid stressful and stimulating activities such as video game playing as well as vigorous exercises.

## 8 *Be aware of cyber-safety*<sup>17,37-38</sup>

- 8.1 Once starting to use the Internet, children should be taught to protect their privacy and avoid exposing too much personal information.
- 8.2 Children should be shown and learn how to set password and not to share with others, except a parent, if it is found necessary.
- 8.3 Children and adolescents should not meet a “friend” only known online.
- 8.4 Children and adolescents should not respond to messages or photos that make them feel uncomfortable, or scared, and they should report the incidents to parents or teachers and seek their help.

## 9 *Behave oneself when using Internet and social networking sites*<sup>17,39-40</sup>

- 9.1 Children and adolescents should be taught and reminded that their behaviour in the cyber world is the same important as their behaviour in the real world. Their identities could be traced through IP addresses. They should be responsible for their own behaviour online.
- 9.2 Children and adolescents should avoid gossiping, harassing or flaming others with mean or scornful messages that would harm other’s reputation or relationship with friends and family. They should be respectful and polite online and avoid sending mean messages or making someone look bad, which may remain in the Internet for a very long time with damages out of imaginations.

9.3 Children and adolescents should be reminded not to spread rumours online.

9.4 Parents should frequently share with their children about online experience, discuss with them and give them guidance, starting from young age.

## **10 *Restrict access to inappropriate content***<sup>17</sup>

10.1 Parents should actively involve in their children's Internet use, and use of Internet safety tools such as filter software to restrict access to any inappropriate content, websites and activities would be helpful.

10.2 Parents should choose age-appropriate video games for their children.

10.3 Parents should frequently monitor the content, websites and activities that their children engage.

## PRACTICAL ADVICE

4.27 In order to effectively convey the above messages and advice to our target groups, four sets of recommendations are produced for parents, teachers, primary school students and secondary school students.

4.28 General principles are explained and elaborated with frequently asked questions (FAQs) to address various common scenarios. They aim to facilitate the establishment and nurturing of a positive family environment, which is characterized by unconditional love and warmth, close and harmonious parent-child relationships, effective communications and constructive responses, consistent disciplines, appropriate demands and avoidance of overprotection or over-involvement, that is essential for the healthy emotional and behavioural development of children.

### Practical advice for parents

4.29 The main principles to help children to achieve healthy use of computers (including smartphones, tablet personal computers, and other electronic screen products) are to develop and empower their awareness and self-control. Hence they can gradually equip with relevant knowledge and skills to be self-regulatory. Parents may adjust the degree of supervisions and delegate autonomy to their children according to their maturity and demonstrated self-control of usage. Going in line with their right of usage, parents should state children's responsibility and incorporate consequences for possible misuse. Periodic review of usage, reducing time use the other day and performing extra house chores as reminders to deter violation of agreed usage help to build yardsticks and ways to settle possible disputes later. Certainly, during the process of learning, both children and parents are prone to make mistake; they should therefore be prepared to adjust and refine their practice and refer to the general principles of SAFE ACTS when necessary.

*Let the children use Internet and electronic screen products appropriately*

- 4.30 Especially for pre-schoolers, parents are role models in their behaviours. Only age-appropriate and educational programmes and products that are tailored made for the benefits of their development should be used, and under the guidance and supervision of parents. What the younger children, especially those under two need most is plenty of time to interact with parents and to explore the world through real life experiences. Televisions, computers and smartphones are definitely not on the top of the list of their needs.
- 4.31 For primary school students, parents should actively involve in their computer use. Parents need to educate their children that some messages and content, e.g. sex, violent, gambling and obscene content, etc. are not appropriate for them. Parents may choose some healthy and beneficial programmes for their children, or ask about their favourite computer activities and maintain direct control on what kinds of computer programmes, software or activities are allowed and installed to the computer or smartphone. Parents need to sit with children at least periodically, while the latter are using their computers. When appropriate, parents may show to their children about what kinds of activities they may do on their computer so as to demonstrate their openness and act as role model to their children.
- 4.32 For secondary school students, computer use has become a common tool for their schoolwork and entirely forbidding their usage is difficult and impractical. Parents should talk with their children about computer use and stay open to their questions and curiosity. This facilitates comfortable communication between parents and children and allows parents to give advice on children's current and future computer use.
- 4.33 Parents may make active use of electronic screen products (e.g. chat-groups of various software/ programmes) to connect with their children and monitor their activities. Bearing in mind that messages are visible to all members in the chat-group and can be forwarded later, parents should restrict sensitive messages to face-to-face conversation with their children to

protect their privacy.

**FAQ 1: Young children can be easily engaged when playing with tablet personal computer or smartphone. Why can't we let them use these products?**

As young children are still immature in growth and development, engaging a long time in Internet use and electronic screen products will have negative impacts on the physical health including musculoskeletal growth and vision. It will also hinder all-round development of young children by taking up the time they need for social, cognitive and physical development. Spend as much quality time with them as possible, e.g. talking, reading, playing and engaging in physical activities together etc. to replace screen time in order to promote the cognitive, physical, social and emotional development of children.

Be careful in choosing the content of the electronic screen products. The products should be kept by adults. Parents have to accompany their children in using these products and give them proper guidance.

**FAQ 2: My one-and-a-half-year-old boy often whines. Recently I find smartphone helps to calm him down instantly and feeding him has also become an easy task. Should I continue to do this?**

A one-and-a-half-year-old boy is capable of learning to feed himself instead of relying on watching or playing with a smartphone to keep him eating his meal. In fact, watching and using any electronic screen products distract children from enjoying eating, thereby defeating their motivation and interest in learning to eat. Their participation during mealtime will then become passive.

Parents need to be careful not to fall into the trap of giving unintentional “reward” to an undesirable behaviour, in this case, giving the smartphone whenever the boy whines, resulting in him learning to get the smartphone by whining. To handle problem behaviour like whining,

use effective behaviour management strategies such as withdrawing total attention to him until the problem behaviour stops or putting him in quiet time for a short duration.

**FAQ 3: Do I really need to sit with my children when they are using computers?**

When children are young, parents have to sit with them when they use computers and electronic screen products. Actually seeing what and how the children are doing with the computers facilitates parents to provide appropriate and timely advice. Parents need to establish open and positive communication with children since young age for appropriate computer use. It is especially important when the computer is connected with Internet because something inappropriate, for examples, gambling elements, violent and sex-related messages, may come up to the computer after just a few “casual clicks”. Besides, sharing and discussing with children about the fun and enjoyment of computer use also require parents to join their activities. Certainly, after the children have demonstrated appropriate degree of self-control, awareness of healthy use and willingness to seek help, direct support from parents can be modulated and more autonomy can be granted for their computer use.

**FAQ 4: I do not have much time to surf the Internet together with my kid. Is there any quick fix?**

To cope with the limitation of time, parents, grandparents and other suitable adults may take turns to surf with children and talk with them about their computer use. Also, building desirable parent-child relationship during other occasions offers parents the advantage of efficient and direct communication with their children for computer use.

Owing to the constantly changing nature of modern technology, parents should talk and check, at least periodically, with the children about their computer use so that timely advice and guidance can be provided to them. Still, children need parents’ care, guidance and support from parents from time to time should be ready when required.

**FAQ 5: How can I talk to my children if they do not like to talk to me about their computer use?**

Apprehension of banning, scolding and punishments are among the most common ones. Parents can cultivate an atmosphere of open communication by staying calm, recognizing children's acceptable needs and granting permission for appropriate use. For banning of inappropriate use, showing genuine concerns for children's benefits and giving reasonable explanations can reduce hard feeling due to rejection. Letting them know parents are caring and sensible actually gain credits for effective parenting.

**FAQ 6: How can I talk to my children if I know nothing about computer?**

If parents are more familiar with modern technology, they will be more confident and of supervising children about their computer use. In fact, most modern computers are designed for easy usage. Given time and willingness, many parents can learn that well too. In addition, some children like to act as experts in their favourite areas; parents may let their children teach them and enjoy the advantage of positive communication with their children by showing curiosity to their interested activities.

**FAQ 7: I suppose the school will teach my child proper ways to use computer. Why should I bother?**

Parents and school staff are collaborators and both are indispensable in the promotion of healthy growth of children. Parents have to understand what their children have learnt at school so they can reinforce children's good practice consistently at home.

Parents can browse the websites of the school or talk to teaching staff to check with news and policies released about the use of electronic screen products. Taking initiative to make inquiries and suggestions for improvement to school enhances communication between parents and school too.



## **FAQ 8: Are there tips for me to set a good model to my children in using computers or smartphones properly?**

Responding to the above question, parents may consider the following:

### **Set boundary for usage**

1. Parents should put aside smartphone while having family time with their children e.g. having family meal or leisure activities, etc.
2. Ignore incoming calls or messages that do not require immediate attention
3. When go to sleep, take measures to prohibit possible disturbances of smartphone e.g. switch it off or set it to flight mode
4. Buy new smartphone when need instead of following technology trend or commercial gimmicks

### **Strengthen family rules and accommodations**

1. Parents should comply with family rules for computer use that they require their children to follow
2. Follow rules consistently and explain valid reason to their children in case parents have special need for exception
3. Talk to their children and review rules periodically to meet any changing circumstances

### **Set up alternatives**

1. Maintain personal contacts for social interactions whenever appropriate, e.g. face-to-face conversation and personal gathering, etc.
2. Other than electronic entertainments, we can develop a wide range of personal interests like cooking, reading, model building, hiking, playing football and fishing etc.

### **FAQ 9: What is “Digital Footprint”? What should I be aware of?**

Digital footprint consists the sum of history of everything a person has done via the Internet or related electronic products e.g. any online behaviours, search results, comments made, images shared, content created, people whom the person has interacted with in the web, etc. Anything people have done in the net leaves traces for retrieval.

Parents need to explain to their children that once digital messages and images are stored or shared online, they may never be completely removed and could be found almost without time and geographical boundaries. Therefore, they need to be prudent to avoid getting into trouble in the future. For instance, taking and sharing intimate pictures with lover via social network may be romantic but become awkward when the intimate relationship has changed years later.

Parents may leave traces in their children’s digital footprint when they share their children’s daily activities or pictures, such as nude images of their lovely baby or upload their activities, parents are actually exposing their personal data. They may not aware that it may lead to embarrassment of their children when they are growing up.

Therefore, it is important for children to realize that their personal responsibilities extend to the Internet world, including email, text messaging, video chatting and social networking, etc. They need to behave decently both during offline and online.

### **FAQ 10: How do I teach my children to maintain “cyber-safety”?**

Parents can teach and remind their children the following:

1. Do not release sensitive personal information, such as personal name, telephone number, address, identity card number, name of school, etc. in the Internet and social network to prevent others’ possible misuse.
2. Set social networking profile to “Private” to ban strangers to browse, download or copy the personal information for improper use.
3. Only chat and interact with people they actually know in real life; do not add strangers as

friends in the Internet.

4. State clearly to friends that they need to ask for permission before uploading or tagging the children's photos or sensitive information on their social networking profiles, and vice versa.
5. Protect personal computer and smartphone by setting up password and change those passwords periodically. For important materials or application software containing sensitive messages, multiple passwords are essential and keep them private. Do not save the passwords in computer or smartphone.
6. Avoid using public computer or Wi-Fi to log in personal account. Avoid giving personal information into computer intended for public use. If using a public computer, switch off the automatic recording function of the computer for browsing, and log out properly to prevent personal account from others' misuse.
7. Install and update anti-virus software and firewall to personal computer and smartphone to ensure protection against virus and malicious programmes.
8. Never open suspicious or unidentified emails, attached files or download software from unofficial sources to avoid possible attacks from spy or malicious programmes.
9. Tell children to get parents' permission before making purchase through the Internet. Choose reputable agents and platform for transaction. Pay attention to detailed information of the products, money amount and way of payment.
10. Do not regard the Internet as an anonymous environment and act recklessly. Beware of the wide coverage and everlasting nature of the Internet world, think for the consequences before sending out messages, and understand that all persons need to hold responsibilities for their acts in the Internet world, behave decently, respect others and comply with the laws.
11. Remind the children to seek help from parents if they encounter problems or queries.

### ***Limit the time of usage and make agreement***

4.34 Extended time of computer use often poses threats to children. For primary school students, buying smartphones or other mobile products for their personal use are not recommended. Setting a maximum time use of electronic screen products according to the Health Tips can help them to maintain balanced arrangements of their study, domestic routines, social lives, sleep and rest. In addition, short breaks and stretching should be included during extended use of electronic screen products (e.g. 20 to 30 seconds rest for every 20 to 30 minutes continuing use) to avoid toil and fatigue.

4.35 For secondary school students, apart from direct advice, parents may arrange and encourage children to engage in various outdoor activities (e.g. sports games and hiking), personal interests (e.g. practices of musical instruments, drawing, photo-taking), social gatherings with peers and relatives, and voluntary community services. All the above can facilitate their enjoyments of various beneficial activities and balance development of personal interests; the chance for prolonged sedentary use of computer and other electronic screen products can be reduced too.

### **FAQ 11: What should I do when making agreements with my children for their computer use?**

Many parents encounter problems to set up and enforce agreements for computer use with their children. Parents may make reference to the following tips and measures:

1. Rules for computer use should be established at the initial stage before permission of using computer is granted.
2. Get their participation: Discuss with children the rules in details and they will be more cooperative simply because their interests, at least partly, are accommodated. Discuss with them while setting up the agreement increases their sense of responsibility too.
3. Specify websites and application software that are prohibited to avoid argument.
4. Specify time frame for usage: Clear cut of time use reduces subsequent argument too.
5. Allow special arrangement: Time of use needs to change under special occasions (e.g.

more or less use may be granted during holidays or examinations). Be open to facilitate their approval seeking from parents to accommodate special circumstances; this reduces chance of violation too.

6. Set relevant and practical consequences for misuse. Cutting time use on the other day, doing extra house chores can deter overtime use. These measures are more rational than scolding too.
7. Set token for cooperation and favourite rewards to increase their motivation. Rewards may be healthy snacks, arranging their favourite outdoor activities and extra time use at weekend, etc.
8. Get other family members as witness to enhance effective supervision.
9. Post the contract in conspicuous place. This reminds both parents and children to follow the agreement.
10. Set date for evaluation. New agreement should be reviewed within one week as amendments are expected to be the most suitable arrangement for both parties.

The above suggestions are provided to enhance children's compliance for agreements. Parents should be open and sensible to discuss with children to decide their own agreements and stand firm to implement in real practice.

## **FAQ 12: What should I do if my children only want to play video games and have no other interests?**

Parents can recognize and respect their children's needs and preference to enjoy video games according to agreement. Paying attention to their daily lives, usual topics of discussions with friends, favourites and choice of entertainments and sports, etc. all give parents clues to further develop their children's other interests, arranging and encouraging them to develop these interests. Adolescents change their interests from time to time. If those activities are healthy, parents may keep an open mind and encourage their children to explore.

Healthy interests serve as life-long and effective stress buffer, personal amusement, ways to improve physical health and chances of stable social contacts with healthy peers, etc. Parents need to understand the importance to develop and sustain their children's healthy interests so that time and efforts can be arranged for this purpose. In addition, interests and hobbies are personal and meant to be fun; parents' support and encouragement are recommended but coercion should be avoided. Placing undue emphasis on achievement or performance usually reduce enjoyment of even the most favourite hobby.

### ***Limit access to inappropriate content***

4.36 Sex, violent and gambling content are not appropriate to their children. For primary school students, parents should personally check to ensure inappropriate content are prohibited. There are also various tools for this purpose and parents may install and regularly update relevant tools to protect children from exposing to improper influences.

4.37 For secondary school students, open discussion between parents and their children and active use of filtering software are still advisable. While children are growing up, parents should equip themselves with the basic knowledge of normal development of adolescence so that parents can give appropriate advice to the children about their growing concerns of puberty and heterosexual relationship.

4.38 Other relevant information to safeguard proper Internet use, such as cyber-safety, digital reputation, cyber-bullying, sexting, etc. is also recommended.

[http://www.infosec.gov.hk/tc\\_chi/parents/internet.html](http://www.infosec.gov.hk/tc_chi/parents/internet.html)

[http://web.hku.hk/~hcwg/hotline\\_chinese.htm](http://web.hku.hk/~hcwg/hotline_chinese.htm)

<http://www.infosec.gov.hk/english/youngsters/cyberbullying.html>

### **FAQ 13: If I find out my children receiving or sending “sexting” messages, what should I do?**

Literally, “sexting” is a combination of the words “sex” and “text messaging”. “Sexting” usually involves sending and exchanging sexually explicit messages, nude or semi-nude pictures and/or videos, suggestive of sexual intentions, via mobile phone, instant messenger, webcams over Internet or other computer technology.

Sending and exchanging intimate messages and photos among young people and adults become increasingly popular recent years. Some use “sexting” to flirt or to have fun and see “sexting” as harmless activity. But taking or sharing an image can have a long-lasting impact because digital photos and videos sent privately can easily be saved and later further forwarded to others. Therefore, “sexting” involves increased risks of embarrassment, distress and emotional trauma and parents need to educate your children about the following:

#### **Be cautious and decent about online behaviour**

Once digital messages and images are stored or shared online, they may become public. These messages and images may never be completely removed and could be found almost without time and geographical boundaries. Therefore, sensitive messages, nude or semi-nude images should never be made. Existing images that may lead to embarrassment should be deleted as soon as possible.

#### **Be firm and say no to any invitation of “sexting”**

Sending and exchanging intimate messages and sensitive images provide chances for bullying

and blackmail. Sensitive images may be further shared with other peers or in school, leading to embarrassment and humiliation. Sensitive images posted online can also attract the attention of sex offenders, who would search, collect and modify images. Offenders may threaten to share sensitive images with the child's peers and friends to force the child to comply with malicious demands. So, children should avoid putting themselves at risks for bullying and blackmail.

### **Be active to seek help**

Bullying, humiliation and blackmail may be too overwhelming for children to handle by themselves. Parents should always show an open and supportive attitude to their children so that the latter may feel comfortable and take initiative to approach parents when they need help.

### **FAQ 14: What should I do if my children breach what I ban them to watch?**

Parents should stay firm for their reasonable bans and should also listen to the children to find out their reasons to breach agreements. Sharing with them about personal relevant experiences facilitates honest discussion and communication. Surfing with them to appropriate websites to search for proper education can justify the reasons and reinforce the stand for banning. Parents should complain to relevant parties if they encounter obscene or indecent content in the Internet that allow access by underage youth.

### **FAQ 15: If my children receive cyber-bullying messages, what should I do?**

Bullying is any malicious acts that intentionally and repeatedly cause harm against a victim (e.g. spreading lies and rumours, sending or forwarding derogatory messages, accusations and/or obscene pictures intending to hurt other's feeling, reputation and cause embarrassment, etc.). Cyber-bullying can cause emotional distress, lower self-esteem, social anxiety and damage of trust on people; parents need to be serious and understanding when their children are confronted with these threats. Let the children know parents stand by their side.

Some children may avoid telling their parents about a cyber-bullying incident either fearing



that you may make things worse or negating their worries immediately. Therefore, blaming the children for possible misdeeds that attract bullying and/or underestimating their concerns should be avoided. Parents are advised to stay calm, support their children, encourage and accept their expression of feelings.

1. Do not reply to cyber-bullies, as this may stimulate further intimidation;
2. Do not delete cyber-bullies' messages which may be used as evidence later;
3. Do not post personal information, such as email address, telephone number and portrait photographs, to any websites, which provide further chances of bullying;
4. Report the bullying incident to the Internet service provider or social network manager for their follow up;
5. Accompany the children to seek help from school guidance staff or social worker if bullying is suspected;
6. Monitor whether the bullying continues, report to police if necessary.

### ***Modulate ways of supervision according to children's need***

4.39 Parents should build up various ways of supervision to their children's computer use, depending on children's degree of maturity and demonstrated self-control. Parents also need to review and adjust the ways of supervision, to keep abreast of time, so that children's developmental needs can be accommodated accordingly.

4.40 At any time, pre-schoolers must be accompanied by trusted adults, preferably parents or teachers, in using Internet and electronic screen products. Only age-appropriate and targeted programmes are watched or used.

4.41 For primary school students, computer, smartphone and other mobile devices should be locked, password-protected and prohibited for use while parents are absent from home. Placing the computer in some open areas, such as the sitting room, and positioning the screen at conspicuous places can facilitate easy monitoring. Confining the use of mobile devices in sitting room, switching off Wi-Fi network and restricting its usage late at the night all help to

limit their time use. Installing safety software tools can filter out some websites that contain content not suitable for children, monitor children's online activities, and limit the amount of time that children spend online.

4.42 For secondary school students, open communication and empowerment are gaining increasing importance. Surfing with and talking to them about their favourite activities and interests for computer use can enhance parents' understanding of how children are using their computer. Granting them appropriate degree of autonomy when they have demonstrated proper self-control in usage can enhance their cooperation and compliance of proper use.

***To be assertive to enforce agreement of usage***

4.43 Parents should be prepared to take actions to confront their children's improper computer use. Parents should remain calm and firm while enforcing rules of computer use. Prolonged scolding and criticism which, usually lead to escalation of negative emotions and greater conflict, are not recommended.

4.44 For primary school students, following agreed punishments usually correct improper computer use.

4.45 For secondary school students, "staying calm and firm" remains crucial for parents to enforce rule of computer use.

4.46 Finally, parents need to remain confident and trendy to help and supervise their children's use of modern technologies. Despite rapid technology advancement, basic parenting skills and principles persist. From a positive view, gearing up with modern technology equips parent to help and grow with their children. Whenever there are further needs, parents should take initiative to seek for more information and help.

**FAQ 16: How can I better manage my children's time use of computer, smartphone and other electronic screen products?**

Indeed, the use of smartphones or mobile electronic screen products is difficult to monitor and there are some sensible justifications for its use. Parents may allow children to use these mobile electronic screen products during idle time, such as waiting for transport, or during short break after study revision.

Parents should remind and enforce regular breaks. Sometimes, simply staying aside with children or politely asking what they are doing with the smartphone can interfere their continuing use. Switching off Wi-Fi network or restricting its usage late at night help to limit their time use. Again, enhancing children's understanding and cooperation are more advisable than restrictive measures.

Still, owing to the advantages of high speed broad-band, larger screen and other physical comforts, most advanced electric game players still prefer the use of Internet-connected computer to mobile devices. Therefore parents should remain vigilant for children's computer use despite the growing popularity of mobile devices.

**FAQ 17: My children will enter secondary school soon and start to argue with me. How should I adjust my ways to supervise their use in these electronic screen products?**

We need to adjust our ways of supervision according to children's degree of maturity and demonstrated self-control. For primary school students, computer, smartphone and other electronic screen products should be locked, password-protected and prohibited for use while parents are absent from home. Placing the computer in some open areas such as living room, and positioning the screen at conspicuous places can facilitate easy monitoring. Installing Safety software tools can filter out some websites that contain content inappropriate for children, monitor their online activities and limit the amount of time they spend online.

Generally, enforcing the use of these products according to mutual agreement between parents and children can effectively rectify misuse.

For secondary school students, open communication and empowerment are gaining increasing importance. Surfing with and talking to them about their favourite activities and interests for computer use can enhance parents' understanding of how they are using their computer. Parents need to be patient to find out whether there are reasonable explanations for their children's violation of rules. Rules may be revised to allow for change of circumstances.

Despite the technologies are advancing rapidly, persistent use of effective parenting principles and skills can help to maintain good parent-child relationship and healthy growth of the children. Once entering puberty, it is normal for adolescents to have their own opinions. Parents need to understand and take it as an essential step of growth.



## Practical advice for teachers

- 4.47 The use of Internet and electronic screen products have become an integral part of daily living. Increasing numbers of education professionals are using online communication tools both personally and professionally. The boundary between teacher and student may become blurred. Teachers should be better informed about the risks of such tools and take steps to look after their own professional reputation.
- 4.48 Although it is full of fun and excitement in the adventure of the digital world, there are potential risks which may affect physical and psychosocial health. Educators play an important role in equipping students with the skills to properly use the Internet and electronic screen products. The following suggestions are made for teachers aiming at helping students to use Internet and electronic screen products safely and healthily. In most circumstances, making reference to the general principles SAFE ACTS would be helpful:

### *Teach the importance of cyber-safety*

#### **FAQ 1: What e-safety issues should my students and I be aware of?**

Inappropriate content is available to children online. Some online materials may contain violent or sexually-explicit content, dirty languages or other inappropriate behaviours which are not suitable for children and young people.

By giving out personal information when chatting or posting online, students may be at risk of making their personal information public. This information may be replicated or recorded permanently in the Internet which may cause serious consequences.

Students may become victims of online predators if they disclose too much personal information or post nude pictures.

By receiving, sending or forwarding threatening and unwanted messages, students may be involved in cyber-bullying.

There is a risk of excessive use of the Internet and gaming which may affect other important aspects of their lives, including academic performance, daily activities, interpersonal communications.

**FAQ 2: What specific advice should I give to my students regarding Internet safety?**

1. Be aware of the consequences of their digital footprint and think before sharing photos or videos online. Students should be reminded that information put online is unlikely to be cleared from Internet record.
2. Change passwords regularly. Always keep personal information private such as address, telephone number, etc. Adjust the privacy settings on the social networking sites so that only their approved friends can view their profile and instant message them.
3. Students should be aware that meeting someone they have only been in touch with online can be dangerous. Never chat, video chat or arrange face-to-face meeting with anyone they know online but do not know in the real world.
4. Teach students the importance of filtering software and high security settings which can block unwanted messages.
5. Download or install software from official and reliable sources so as to protect their computers from hackers.
6. Information on the Internet may not be true. Always check information with other official websites, books or experts.
7. Enrich students' knowledge on laws or regulations related to Internet behaviour and the consequences of such offences.
8. To share with students the news about cyber-crime to raise their alertness.

## ***Help to prevent students from excessive use of the Internet***

### **FAQ 3: How can I pick up students who may be using Internet excessively?**

Communicate with students' parents and observe students' behaviours. There are signs to look for if teachers suspect their students may be using the Internet excessively:

1. Often uses more time online than planned and sacrifices needed hours of sleep to spend time online, resulting in frequent excessive fatigue.
2. Academic problem, such as sudden declining grades, failure to hand in homework, being late for school or truancy.
3. Becomes agitated or angry when online time is interrupted. Preoccupied with online activities, feeling lost and anxious when offline.
4. Withdrawal from friends and family. Prefer to spend time online rather than with friends or family. Conflicts with family when restricted from online access.
5. Withdrawal from their usual extra-curricular activities, loss of interest in activities or hobbies.

### **FAQ 4: How can I work together with parents in preventing my students from excessive use of Internet?**

Spend time and talk with students about their favourite websites, online activities etc., actively listen and try to understand the reasons behind their use of the Internet.

Understand students' difficulties and underlying problems such as lack of achievement motivation, low self-esteem, learning problem, overreliance on gaming for a sense of satisfaction and achievement. Students may be more willing to discuss their problem and seek help from you if they feel being understood.

Help students understand the risks and benefits of using the Internet. Help them develop proper attitude and a balanced and healthy life style. Teach them time management skills and set time limit on Internet use. Develop students' interests and strengths. Expand their exposure and social network by participating in a wide variety of activities.

Maintain close and regular communication with parents. Early recognition of signs and

symptoms of excessive use of Internet is important. Refer to professionals for counselling and follow-up.

***Maintain professional boundaries when using online tools***

**FAQ 5: What should I be aware of when I use email or smartphone to contact students or parents?**

Find out about the school policy and the etiquette for contacting students inside and outside the classroom using email and smartphone.

If teachers are going to “chat” with students online, make sure to set up “office hours” so that teachers are free to end the conversation when the time is up. Teachers may also want to set time limits on how long to speak with each student. Make sure that students and their parents are aware of these boundaries and limits.

Teachers can contact students and their parents through different channels including telephone and email. If students do need to contact their teachers with regard to assignments or examinations, school email address is to be preferred. Teachers may consider setting up a separate account instead of using personal email accounts to contact students or parents.

Office telephone is preferred, keep personal phone numbers private when using smartphones to contact students or parents.



**FAQ 6: What should I do if a student wants to “friend” me on my social networking account?**

Teachers can use different channels to communicate with students so as to understand their feelings and behaviours. They are advised to use official channels of communication, e.g. office email address or set up a separate profile to be used only for school.

Avoid using personal email account to contact students. Establish professional boundaries and avoid “friending” students and parents or giving them access to personal blogs and image-sharing sites. Avoid sharing students’ or own personal information.

***Be aware of cyber-bullying***

**FAQ 7: What should I emphasize to my students about cyber-bullying?**

Overseas and local studies found that cyber-bullying victimization is associated with serious psychosocial, affective and academic problems such as low self-esteem, anxiety, depression, school refusal, social withdrawal and even suicidal ideation.

Cyber-bullying, like other forms of bullying, is never acceptable. Some cyber-bullying incidents are unintentional. Something sent as a joke may be deeply upsetting or offensive to others. The sender may send it as a joke without thinking or being aware of the potential seriousness of the consequence.

Cyber-bullying material can be distributed worldwide rapidly. Sending or forwarding nasty messages could be assisting a bully, and even be accused of cyber-bullying.

### **FAQ 8: What can I do to prevent cyber-bullying?**

1. Emphasize the school's anti-bullying policy. Educate students about cyber-bullying and help them understand how to prevent and respond to incidents of cyber-bullying. Build a safe environment and establish a school culture of acceptance and respect.
2. Talk to students about privacy and respect. Tell them not to quote or forward others' personal messages without permission.
3. Remind students not to incite cyber-bullying. Encourage them to stop the incident under safe circumstances and report to teachers.
4. Encourage proper netiquette for communicating online, including guidelines for acceptable language and content. Respect people with different opinions and reinforce positive social interactions.
5. Encourage students to be a responsible digital citizen. Students need to have a better understanding of family, school, and legal limits of online speech.

### **FAQ 9: How do I know when my student is being cyberbullied?**

Communicate with parents and observe students' behaviours. Students who are cyberbullied may exhibit the following signs:

1. Showing signs of significant emotional distress after using Internet
2. Becoming more anxious when emails or texts arrive
3. Declining grades and loss of interest in schoolwork
4. Being bullied at school
5. Avoidance of social situations or not wanting to go to school

### **FAQ 10: What should I do if a student makes a disclosure?**

1. Familiarize with the school policy which addresses the issue of cyber-bullying.
2. Stay calm and acknowledge the student's courage and assertiveness to seek help. Show your support and do not blame the student.

3. Identify and correct myths such as “the bullies have the right to demean those who are inferior” or “it is useless to seek help”.
4. Save the evidence. Learn how to keep records of offending messages, pictures or online conversation.
5. Never retaliate or reply to bullying messages so as to avoid aggravating the problem.
6. Block the bully. Filtering software and security setting adjustment may help. Report to the moderator of the site or service provider.
7. If the cyber-bullying is serious and if the messages include threats, report to the police.

## Practical advice for children and adolescents

4.49 It is fun to use the Internet nowadays. We can connect with our family and friends through different ways on the Internet including instant messaging or social networking sites. We can also get different kinds of information we want or play games for fun. However, there are many potential risks that may cause harm to us if we misuse the Internet and electronic screen products. To stay safe and have fun while online, children and adolescents should make reference to the general principles DARES as well as the health tips mentioned above. Further practical advice below serves as additional reference for children and adolescents when they face with different challenges. In order to address the different needs of younger and older children, the practical advice is grouped into information for primary school students and that for secondary school students.



## Primary school students

**FAQ 1: I am only allowed to go online for half an hour every day but I want more. I have asked my mum to let me play longer but in vain. What can I do?**

What your mum concerns most is your lack of control on the amount of time you spend on computer. If you can ensure a balance and proper time management, your mum will be more reassured.

Be aware that it is easy to lose track of time when we navigate websites, play online video games and watch videos. Very often we may go online with an intent to spend only a few minutes, but end up with spending hours on the Internet.

### **Smart Tips:**

1. Tell your parents how and why you enjoy using the Internet, and share your feelings with them through open communication.
2. Listen to your parents and try to understand their concerns and worries.
3. Ask yourself whether you have neglected other areas of life when you spend too much time on the computer.
4. Use the computer with a specific purpose. Avoid browsing Internet just to kill time. Switch it off after use.
5. Set a timetable for your daily routines after discussing with your parents. It is important for you to live a healthy and balanced life.
6. Make a family agreement which may include the time spent online, surfing the Internet after you have finished your homework, switching off computer by 10 o'clock the latest. We should follow the rule as agreed.

**FAQ 2: I enjoy playing online video games very much and when offline, I will continue to play video console. My mum and dad often complain that I am “addicted” to gaming, which makes me very upset. What can I do?**

Avoid excessive use of the Internet or gaming. Those who are preoccupied with gaming could often feel lost or distress when they are away from the computer.

Be aware that it is easy to lose control on time spent on video games during holidays or weekends.

Try to engage in different kinds of healthy activities for entertainment.

**Smart Tips:**

1. Tell to yourself: “I would stop playing in 10 minutes. I have many other enjoyable things to do.”
2. Agree with your parents’ rules of playing video games online. Try to set a reasonable play time limit right from the start of your holidays. Set a weekly quota for Internet use or to agree that certain games should only be played at weekends.
3. Engage in different activities for entertainment. Activities such as playing jigsaw puzzles, doing craftwork and reading are as interesting and fun as online games.
4. Spend time with your family. Talk to them about things happen in school, progress in learning and relations with classmates, etc. Join different activities with family such as board games, ball games, cycling and swimming, etc.

**FAQ 3: I sometimes play online video games with my brother. Some of his favourite games are rather violent and involve repeated killing. My mum warns us that the games are too violent and we are not allowed to play these games anymore. Is it true that we will become aggressive if we play violent video games?**

It is true that exposure to violent video games will have adverse effects on us, may lead to aggressive behaviour and lack of empathy. Therefore, we should understand our parents' worry.

Many non-violent games are also funny and challenging.

Many online and offline video games are interesting, educational and suitable for children.

**Smart Tips:**

1. Play games that are suitable for children. Avoid games that may contain abusive language, inappropriate behaviours, violent or sexually-explicit content.
2. Choose games and online content that are recommended by parents or teachers.
3. Many interactive games can cater for a wide range of interests such as sport related games, mission based games and quests inspiring users to complete challenges.
4. It is fun to interact with your family and friends in games such as hide-and-seek, chess games, board games and simulated game, etc.

**FAQ 4: My friend suggested me to make online friends on social networking sites. In order to sign in, I have to give out personal information such as my name, age, gender, email and a profile picture. How can I stay safe when I reveal my personal information on these social networking sites?**

Don't make friends online.

You should protect your privacy and avoid exposing too much personal information.

Other Internet users may not be who they say they are. They might create a fake profile to pretend to be someone else. Information on the Internet may not be true. It is often difficult to find out whether a person is telling the truth or not.

“Friends” made online are still strangers. Someone online might lie about who they are and try to befriend you on the Internet but actually have bad intentions.

Strangers may be able to find you or even hurt you with the personal information you shared on the Internet.

Making online friends will limit our opportunities for interaction with our friends in the real world.

Online communication without interactions in the real world may affect our face-to-face communication, which may have a negative impact on our social and communication skills development.

**Smart Tips:**

1. There are many traps in Internet and we have to protect our online safety. Never share your personal information, including your full name, birthday, pictures, school, address, email, phone number and daily routine, with people you meet online but do not know in the real world. It is best to use your real identity to communicate online with your real world friends and family.
2. Meeting someone you have only been in touch with online can be dangerous. Never chat



or arrange face-to-face meeting with anyone you know online but do not know in the real world. Be aware of news on cyber-crimes so as to raise alertness.

3. Seek advice from parents or teachers promptly when you encounter problems.
4. Try to participate in different kinds of group activities in real life to develop your social life in the real world.

**FAQ 5: What should I do if someone online is being unkind to a kid I know? I tried not to join in but the bully began to attack me by sending nasty messages, making jokes and calling names. What should I do?**

What you encounter is a form of cyber-bullying, that someone uses technology, like the Internet or mobiles, to deliberately and repeatedly bully another person. It can be in the form of nasty and hurtful messages, pictures or videos.

It is right for you not to join in or spread the unkind messages from the bully.

**Smart Tips:**

1. We should learn to respect different opinions and think critically. We should be polite in our messages or reply to others online. Never use offensive language to chat online.
2. If someone or something makes you feel uncomfortable or worried, tell your parent, teacher or a trusted adult right away to discuss ways to solve the problem.
3. Do not incite any cyber-bullying. When someone you know is being cyberbullied, support the victim by reporting the incident to a trusted adult under safe circumstances.
4. Try to block all communication with the bully and save all the messages, emails, pictures or videos as well as record the username, date and time of the cyber-bullying incident as evidence.
5. Do not retaliate or respond to the bully. Replying to the bully may trigger more bullying messages.

**FAQ 6: While I am online, websites with nude pictures and videos will pop up occasionally. Some friends have recommended sex websites to me. I know my parents won't let me visit these websites but I am really curious. Is it a problem?**

Starting from puberty, it is natural for young people to be curious about sex.

Inappropriate content on the Internet may contain inaccurate information and distorted values and attitudes. Exposure to inappropriate sexual content may have a negative impact on us.

**Smart Tips:**

1. Avoid exposure to inappropriate sexual content. We should be aware of the appropriateness and credibility of the information we get from the websites.
2. You should gain knowledge about sex from appropriate sources. Turn to your parents, teachers or social workers for help and advice if you have any concerns about sex or personal development.

## Secondary school students

### **FAQ 1: Whenever I am online, my mum always complains that I have spent too much time on the Internet. What can I do?**

Prove to your parents that you have self-control and discipline. Besides going online, your daily activities include study, entertainment and rest are well managed.

Tell your parents how and why you enjoy using the Internet, and share your feelings with them through open communication. Discuss with your parents about when and how long you can stay online, and what activities you can do online beforehand. It is very important that you and your parents have an agreement based on mutual trust and understanding.

Set a time out by switching off computer and putting aside the smartphone.

It is important for you to live a balanced life and develop different interests such as sports or music.

Arrange time offline for socializing with your friends and family, spend some time for physical activities every day and play computer games or surf the Internet after you have finished your homework.

Take note if you have spent too much time on computer and smartphone which affects study, daily life or become irritated when offline. If it happens, you need to take it serious and find out the underlying causes e.g. feeling bored, encountering learning difficulties or interpersonal relationship problems. Seek help from parents, teachers or social workers when necessary.

**FAQ 2: I enjoy playing online video games with my friends. My parents always try to stop me from playing and it is often difficult for me to stop in the middle of a game. It really upsets me when they try to disturb me. What should I do?**

Communicate with your parents and invite them to play the games so as to give them a better understanding of your Internet use. Listen and try to understand their concerns and worries.

Setting time limits for gaming or using time limiting tools may help to avoid excessive use of Internet. Show your self-control to less your parents' worries.

It is helpful to tell yourself: "I should stop playing in 10 minutes. I have many other things to do offline." Be assertive and tell your friends: "I have to do homework now. Let's play together next time." or "It is time for me to sleep now. I have to switch the screen off."

Actively participate in activities for fun. There are different forms of entertainment other than online video games, such as ball games, building models, reading comics and different sorts of outdoor activities.

It is fun to develop new interests and hobbies. Join your friends to participate in healthy group activities.

**FAQ 3: I like chatting with my friends using instant messaging and social networking sites. Recently I find that some of my "private" messages are shared by others and widely spread online. How can I stay safe while I am chatting online?**

Bear in mind that all electronically circulated content is hard to control. The audience can be very large and reached rapidly. All information you give out on your profile and all your messages could stay online forever as anyone can save and repost before you delete them.

Think twice before you put anything on your site, especially those sensitive information that embarrass your friends or yourself. Ask yourself: "Why do I need to post these pictures?", "Who will see it?" or "Will they misunderstand or misuse these information to attack me?"

Make clear to your friends to seek your approval before uploading or sharing any photos or messages related to you, and vice versa.

Making strong passwords and changing passwords regularly to secure your computer and online accounts are also important. Do not share your passwords with anyone. Adjust the privacy settings on the social networking sites so that only your approved friends can view your profile and instant message you.

**FAQ 4: What should I do if my “online friend” asks for my information and requests meeting up with me?**

“Friends” made online are still strangers. It is very easy to lie on the Internet. There is no way to find out whether a person is telling the truth or not. Never make friends online. Some adults may pretend to be your age and try to befriend you on the Internet but actually have bad intentions. Be aware of the news about cyber-crimes to raise your alertness.

Never chat or arrange face-to-face meeting with anyone you know online but do not know in the real world. No matter how long you have met them online, they are still strangers, meeting them can be very dangerous.

Be careful not to share your personal information and daily routine, with people you meet online but do not know in the real world. Strangers may be able to find you or even hurt you with the information you shared.

Try to participate in different kinds of group activities in real life to develop your social life in the real world, e.g. voluntary services, sports activities, interest groups, etc.

**FAQ 5: Someone I meet on the Internet send nasty messages and images about me to others within different interactive online sites. Is it cyber-bullying? What should I do to stop it?**

Cyber-bullying refers to someone uses technology, like Internet or mobiles, to deliberately and repeatedly bully another person. It can be in the form of nasty and hurtful messages, pictures or videos.

If you encounter cyber-bullying, report the incident to a trusted adult straight away. Your parents or teachers can help you report the incident to the right place.

Report to the moderator of the site or service provider that you have been bullied. Check providers' websites to see where to report incidents. If the cyber-bullying is serious and if the messages include threats, report to the police.

Try to block all communication with the bully and save all the messages, emails, pictures or videos as well as record the username, date and time of the cyber-bullying incident as evidence.

Do not retaliate or respond to the bully. Replying to the bully may trigger more bullying messages.

**FAQ 6: A friend of mine forwards to me a video about a classmate. I find that it is a video of my classmate being humiliated and bullied. What should I do if someone I know is being cyberbullied?**

Bullying is not a joke or something funny. It may cause serious consequences. If you receive a nasty message or a picture about someone, do not forward it. You could be assisting a bully, and even be accused of cyber-bullying.

Before you post or forward a funny picture of your friend or make a joke about someone online, ask yourself whether you want everyone to see it. What you think is a joke may really hurt someone else. Always think before you post or forward messages to others. Do not incite any cyber-bullying. When someone you know is being cyberbullied, support the victim by reporting the incident to a trusted adult.

Respect the privacy of others by not disclosing information of others when using the Internet. Always seek permission before sharing, posting or forwarding messages or pictures publicly online.

Always check and verify online content or message you receive from others. Analyse information and its sources critically. Be aware of biased opinion and inappropriate content.

**FAQ 7: If I express my resentment towards certain issues or say something negative about someone while remaining anonymous online, shouldn't it be fine since I am appearing "invisible" and no one shall be able to identify me?**

Although most people who cyberbully may attempt to remain anonymous, there are ways to find out information about where cyber-bullying originated. Evidence can be gathered from online and mobile communications. Remember that when you send a message to someone, you cannot see the impact that your words or images have on the other person. Something sent as a joke may be deeply upsetting or offensive to others. You may not be fully aware of the potential seriousness or impact of your actions.

We should learn to respect people with different opinions and think critically. Try to make positive use of technology and create a positive footprint. When publishing information or having conversations with others online, always show respect to people and be a responsible “digizen”.

Be mindful of how you present yourself online, who can see your content and how others are going to respond to your messages. Be aware of how others may be hurt by what you do, whether you intend to harm or not. It may cause serious emotional disturbance to the victim even suicidal ideation.

Be aware of the potential legal consequences of cyber-bullying. Many cyber-bullying incidents can themselves act as evidence. The bully will leave a “digital footprint” that can potentially be used as evidence. To identify the perpetrator, the police may request the service provider to disclose the data about a message or the person sending a message which can be used as evidence against the bully.

**FAQ 8: Lately, one of my “online friends” invites me to webchat. He shows his naked body and asks me to “nude chat”. What should I do?**

Some people you meet online have bad intentions. They may try to befriend you so as to gain your trust and then persuade you to post sexual content online, including appearing naked and performing sexually suggestive acts, either via your digital camera, phone or on webcam. Hence, try not to use webcam or video chat face-to-face with anyone whom you do not know in the real world.

Exposing private body parts can be regarded as an illegal act, with offender subject to criminal liability. Victims should report to police. You should take caution to avoid falling into this trap by being videotaped and blackmailed.

If someone you do not know add you to their contact list or send messages to you, make sure you block them, never reply to them and do not open the file that they sent you.

If anyone asks you to do anything you feel uncomfortable, you should say "no" to the request and block or delete that person from your friend list. You should report it to a trusted adult.

**FAQ 9: My classmate sent me a link to websites with nude images and sexual content. I am worried that my parents will find it out but I am really curious and seem "addicted" to these websites. Is it a problem?**

Young people are naturally curious about sex but we should be aware of the appropriateness and credibility of the information we get from the websites. Inappropriate content on the Internet may contain false information which may have a negative impact on us and distort our views and attitudes.

Exposure to sexual content is associated with high risk sexual behaviour. Adolescents involved in online sexual activities have greater likelihood of being involved in early onset of sexual intercourse and multiple sexual partners.

Understand how to determine credibility of Internet websites and critically evaluate any materials you find. Avoid exposure to inappropriate sexual content.



We should gain knowledge about sex from appropriate sources. Turn to your parents, teachers or social worker for help and advice if you have any concerns about sex or personal development.

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## ***CHAPTER 5 SUGGESTIONS FOR OTHER STAKEHOLDERS***

- 5.1 The aim of the Advisory Group is to work out a set of recommendations for children and adolescents, parents and teachers to help the children and adolescents on healthy use of Internet and electronic screen products. However, it would be less effective without the support and facilitation from other parties, e.g. the government, schools, IT industry, the NGOs etc. It is important to note that the Advisory Group would not be able to address all areas that are essential to safeguard the health of children and adolescents related to the use of Internet and electronic screen products. While it is not the terms of reference of the Advisory Group to make recommendations for other stakeholders, the Advisory Group considers there is a need to give some general remarks and suggestions as references for other parties.
- 5.2 While these new technologies have already become integral to our daily lives, it may bring risks that are beyond our imagination with disastrous and harmful effects that may last for long, if not a life time. Children and adolescents are in a vulnerable period of growth and development when they are shaped by different experiences. Through Internet, they are learning new skills, enriching their knowledge and experiences, making new friends with more opportunities in a much easier way. At the same time, the fast changing nature of these new technologies makes parents feel incompetent to guide their children and keep them safe. It is now prime time for the general public and the stakeholders to be aware of the enormous influences of these new technologies exerted on our younger generation and make measures to safeguard their health.
- 5.3 A significant amount of time that children spent on Internet and electronic screen products relates to search of information and preparation of home work for academic purposes. We understand that the Education Bureau and schools have already taken note of the potential adverse harmful health effects and have on-going development of school curriculum and

learning and teaching resources at different key learning stages, implemented cyber-bullying awareness in schools as part of the anti-bullying campaign as well as training to teachers on various themes like cyber-safety and sex on the media.<sup>1-3</sup> Advice on the use of computer and e-books in respect to vision health has been provided.<sup>4</sup> Given the pace at which new technologies are being developed, and the trend that students is engaging in the technologies for study and communications, there is a need for the education sector to closely monitor the latest development of the technologies and impact on their use on health and well-being of students. Continuous updating of relevant policy guidelines and curriculum would help to facilitate teachers to promote healthy use of Internet and electronic screen products among students.

5.4 We understand that the relevant government bureaux and departments responsible for IT policy are also aware of the possible adverse health effects of the Internet and electronic screen products. Specifically, the publication of obscene and indecent articles on the Internet via Hong Kong-based servers is already regulated under the Control of Obscene and Indecent Articles Ordinance (COIAO)<sup>5</sup>, and currently, such articles are dealt with under a co-regulatory approach, whereby the Office for Film, Newspaper and Article Administration (OFNAA) implements a Code of Practice with the Hong Kong Internet Service Providers Association. Under the Code of Practice, if the content under complaint is indecent, the Internet Service Provider (ISP) concerned will request the webmaster to add the required statutory warning notice or remove the indecent article. If the content under complaint is likely to be obscene, the ISP concerned will block access to the article or request the webmaster to remove it. The ISPs may also cancel the account of the repeated offenders. OFNAA or ISPs will refer cases involving obscene articles to police for follow-up enforcement action.

5.5 Children and adolescents should be encouraged to play age-appropriate games both online and in video console. Many developed countries have control to the access of inappropriate materials including obscene, indecent and violent content in computer games with their own

rating system such as the Pan European Game Information (PEGI) in Europe<sup>6</sup>, Entertainment Software Rating Board (ESRB)<sup>7</sup> in the United States and Canada as well as the Computer Entertainment Rating Organization (CERO)<sup>8</sup> in Japan. Detailed description of these different rating systems can allow parents to choose wisely the imported computer games for their children. All computer and video games published in Hong Kong are under the regulation of the COIAO, and, depending on whether their content is obscene, indecent or neither, are subject to different restrictions of publication.<sup>5</sup> Under the COIAO, articles, including computer or video games, which are neither obscene nor indecent may be published without restriction. Nonetheless, parents should strengthen the restriction of access to the violent content of such games by underage. In addition, industry involved in video games and electronic screen products should consider developing user-friendly filter software to restrict children's access to inappropriate websites.

- 5.6 Industry may consider providing parental guides, warnings and age-ratings to products for or enhance the use of electronic screen products for infants and young children. In European Union, a new sound level safety standard for personal music devices sold in Europe has been adopted in 2011 applied to industry to protect hearing of users. All such products should set sound level limit at 85 dBA as a safe level for sustained listening under foreseeable conditions of use.<sup>9</sup> A manual function allows the volume to override this standard to a maximum sound output at 100 dBA.
- 5.7 It is noted that OFNAA organizes publicity and educational programmes on the operation of the COIAO, mainly targeting children and teenagers. OFNAA also organizes workshops to brief parents on the use of the Internet and the availability of different types of filtering solutions, and distributes filtering software free of charge to parents. It would be necessary for OFNAA to continue to monitor the situation and see what needs to be done to promote healthy use of the Internet by children and adolescents in Hong Kong.



- 5.8 In addition, NGOs and social service sectors may consider enhancing the availability of resources to empower those in need, including parents, to improve their IT knowledge and literacy. These resources include relevant information and learning courses on the basic functions and characteristics of common IT applications, how to install filters, means to communicate with children on the new technology, etc. NGOs may also consider providing more services to help those excessively using Internet or electronic screen products or those who are at risk. Offline group activities for children and especially adolescents should be funded and made available for those from lower social classes.
- 5.9 The work of the Advisory Group should only be the start of building a safe yet stimulating and vibrant digital era in the 21st century of Hong Kong. The conjoined efforts not only from the health sectors, educators and parents but also from other stakeholders including social service sectors, industry and other government departments are necessary.

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## *CHAPTER 6 CONCLUSION*

- 6.1 This Report highlights one of the most concerned issues i.e. health problems, relating to the impact of ICT on our younger generations. The recommendations made in this Report are based on the current knowledge on health effects on use of Internet and electronic screen products.
- 6.2 We believe that the information and recommendations will provide a good reference for children, adolescents, parents and teachers on this important issue. They have to take appropriate measures to minimize the adverse health effects so that the technology can help our masters of the future really benefit from its fascinating features.
- 6.3 However, this is not enough. Stakeholders from other sectors should also take responsible actions to safeguard the health and well-being of the young. Information in this Report serves as a good reference and starting point to facilitate all partners to work together.
- 6.4 Last but not the least, the health impact of the new technology is not just on children and adolescents. Adults are also being affected by this digital generation. While the information in this Report mainly focuses on children and adolescents, some findings and recommendations are also applicable to adults. In fact, people from all walks of life should be aware of the potential adverse health effects arising from this growing technology.

## ANNEX

### Membership list of the Advisory Group on Health Effects of Use of Internet and Electronic Screen Products

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For further information on healthy use of Internet and electronic screen products,  
please visit website: [http://www.shs.gov.hk/english/internet/health\\_effects.html](http://www.shs.gov.hk/english/internet/health_effects.html)

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