5G White Paper (position paper)

5G refers to the **5th generation** (not 5GHz bandwidth) of mobile communication technology that will fundamentally change the way we live, work and travel. 5G promises better coverage, greater download speeds and low latency that will provide the infrastructure to enable driverless cars, autonomous manufacturing, artificial intelligence and smart devices and homes on a *mass level*. In short, *all* appliances will be fitted with antennas as part of the Internet of Things (IoT). The 5G infrastructure will involve the deployment of thousands of satellites in the magnetosphere and hundreds of thousands of small cell antennas every 50 to 250m in high density areas. The initial 5G rollout will use the existing 4G infrastructure using 3.5 GHz (3575–3700 MHz), however this frequency will increase to 26-28 GHz bandwidth and beyond with future rollouts. 5G uses high frequencies (millimetre wave radiation) which was initially developed by the military as a weapon and is still used today for crowd control.

The Australasian Society of Building Biologists (ASBB) holds the position and belief that the rollout of 5G should be halted until such time that further independent research is conducted to establish its impact on human, animal and plant life. This belief is based on:

- The impact of long-term exposure (2 hours per day for 5 or more years) to low levels of radiofrequency electromagnetic energy emitted from wireless devices has significant biological effects. These include oxidative stress leading to single and double DNA strand breaks, increased permeability of the blood brain barrier and suppression of melatonin which has significant downstream effects on sleep, immune and reproductive function (BioInitiative, 2012)
- There is no research to prove conclusively that the technology is safe. According to the regulatory body - Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), “the dosimetry (dose absorbed by a human) in the 6 GHz to 300 GHz range is still developing and further research is required to examine the effects of exposure to new and emerging technologies”.
- Whilst there has been little research on the impact of millimetre wave (mmWave) radiation on human health, its impact on eye disease like cataracts has been thoroughly studied since the 1960s as the eyes lack sufficient blood flow to dissipate heat effectively (Carpenter & Ummersen, 1968; Foster, Ferri, & Hagan, 1986; Le Dréan et al., 2013; Moss, Murray, & Parr, 1977; Riva, Logean, & Falsini, 2005; Vignal, Crouzier, Dabouis, & Debouzy, 2009; Di Ciaula, 2018).
- There are also concerns that sweat ducts in the skin throughout the human body act as helical antennas to high frequencies and have been shown to absorb high levels of this radiation (Betzalel, Ben Ishai, & Feldman, 2018).

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Preventive Measures

1. Increase your distance from the source of RF EME. As you double the distance away from the source, you reduce your RF EME exposure by 75%.

2. Reduce your long-term exposures to wireless technologies within your living and office environments by keeping calls short, avoiding Bluetooth enabled devices, using hardwired options wherever possible, and positioning radiofrequency devices away from where you spend time (ie bedroom, office/study, favourite couch…).

3. Avoid the purchase of 5G-enabled devices such as routers, iPads and cell phones as they are fitted with multiple antennas that can significantly increase one's exposure to radiofrequency radiation.

4. Have your living / office / sleeping environments measured by a building biologist.

Mitigation measures

1. The ASBB, in our **professional opinion**, DO NOT endorse the use of any plug-in devices, crystals, stickers or other items claiming to reduce exposures or harmful effects to RF EME. If any reduction **cannot be measured** by our professional equipment, then it is NOT reducing the risk of exposure.

2. The ASBB, in our **professional opinion**, discourages any physical shielding (ie paints and canopies) unless proper testing pre- and post-remediation are completed by a professional or ASBB Building Biologist, who has been 5G-trained and certified by the Australian College of Environmental Studies (ACES). Shielding can potentially increase your exposure to RF and other EME hazards, if incorrectly applied. Therefore, eliminating the sources or increasing the distance from the emitting source is highly encouraged first.

3. Indoor sources of RF EME are frequently higher than external sources of 5G. Therefore, an ASBB Building Biologist will always assess your living/working and sleeping areas for potential hazards. Regular assessments are advised as internal and external sources may change over time. These may be due to the purchase of new home appliances (internal environment) or the installation of new small cell antennas by Telecommunications Carriers (external environment).

What Can You Do?

- Sign the petitions: https://www.aph.gov.au/Parliamentary_Business/Petitions/House_of_Representatives_Petitions/Petitions_General/Petitions_List?id=EN0977 AND https://bit.ly/stop5gaus
- Hire an ASBB 5G-trained Building Biologist: http://asbb.org.au/practitioners/
  Join a Stop 5G group on Facebook and take action in your local council area
- Listen to Nicole Bijlsma's interview "5G Technology: is it worth the risk?" FX medicine podcast HERE
- Listen to the interview with the lawyer who stopped several small cell antennas in Australia: How to Take Action Against 5G – Max Igan in Conversation with Ray Broomhall

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