Children should not put laptop computers with wi-fi connections on their lap because of the potential health risks, the Government’s leading adviser on mobile phone safety says.

Lawrie Challis gave warning that the effects of wi-fi on children should be monitored, amid growing concern about emissions from such networks.

Professor Challis, chairman of the Mobile Telecommunications Health Research Programme, said that children should keep a safe distance from the embedded antennas on wi-fi-enabled laptops until more research had been carried out.

“With a desktop computer, the transmitter will be in the tower. This might be perhaps 20cm from your leg and the exposure would then be around 1 per cent of that from a mobile phone,” he told The Daily Telegraph. “However, if you put a laptop straight on your lap and were using wi-fi you could be around 2cm from the transmitter and receiving comparable exposure to that from a mobile phone.”

He said that because children were known to be more susceptible to harm from other sources of radiation, extra care should be taken. “Children are much more sensitive than adults to a number of other dangers such as pollutants like lead and UV radiation. So if there should be a problem with mobiles, then it may be a bigger problem for children. Since we advise that children should be discouraged from using mobile phones, we should also discourage children from placing their laptop on their lap when they are using wi-fi.”

A teachers’ union said this week that the Government should look into the potential health risks from radiation from wi-fi networks to staff and children in schools. Philip Parkin, general secretary of the Professional Association of Teachers, said: “There needs to be a scientific review of the evidence that’s there and new scientific investigation of the potential effects. There’s a concern the potential health risk of this technology hasn’t been investigated fully.”

The Health Protection Agency published a report in 2005 supporting the need for future research of all new technologies, including wi-fi. It said in a statement: The HPA has always pressed for more research into these new technologies.”

But it added that wi-fi devices ran at a lower power than mobile phones and a person sitting in a wi-fi hot spot for a whole year would receive similar doses of radiation to a person who spent 20 minutes on a mobile phone.

It is estimated that half of primary schools and four fifths of secondaries have installed wi-fi networks. As they only have to transmit a matter of metres, they run at lower power than mobile phone transmitters. But that has not assuaged the fears of some education authorities. In Austria, the local government for Salzburg has warned schools not to install wi-fi and is considering a ban.