

Dr Kevin Broad

[kevinbroad@btinternet.com](mailto:kevinbroad@btinternet.com)

27<sup>th</sup> August 2020

To Whom It Concerns,

My name is Dr Kevin Broad and I am a neuroscientist who has been asked to comment on the hypothesis that using infra-red thermometers to test for temperature in the context of Covid-19 may damage the pineal gland of the brain. I am an aikido practitioner and have been asked by Steve Billett of the British Aikido Board to prepare this risk assessment/ document regarding the safety of infra-red thermometers.

The hypothesis that infra-red thermometers may damage the pineal gland arises from the fact that posts shared more than 5,800 times on Facebook since the end of June claim that using an infrared thermometer to take your temperature risks damaging the pineal gland, located in the brain. Most of these posts begin in the same way: they claim to warn about the dangers of infrared thermometers by reporting “the testimony of an Australian nurse”, “very telling”. According to these “testimonies”, taking a temperature using an infrared thermometer endangers the pineal gland, located in the brain.

**This is an irresponsible assertion and is false for the following reasons.**

**1. The Design of the Instrument.**

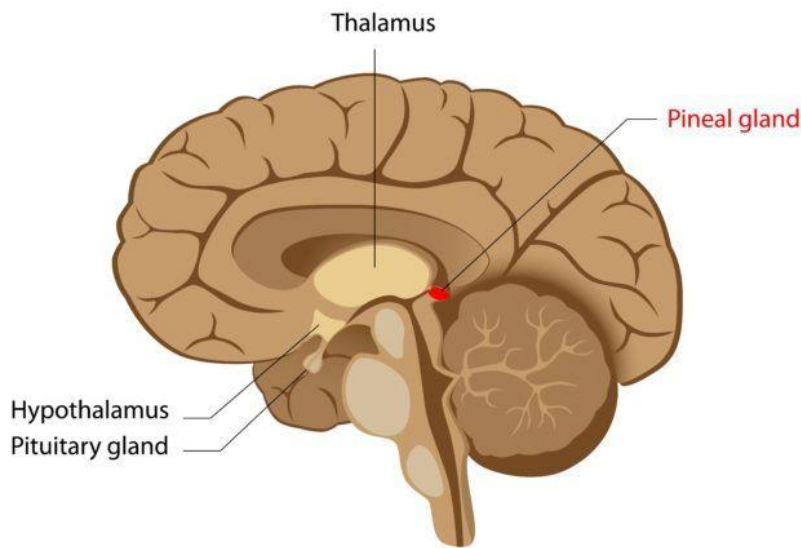
Thermometers designed to take human body temperatures do not emit any infra-red radiation, they function by capturing the infra-red spectra emitted by the human body at a point 1.5” from the centre of the forehead, using a lens. The surface temperature of the forehead is lower than the centre of the body, but the thermometer gets around this by using a complicated algorithm to work out the internal temperature of the body from an initial reading at the surface. No infra-red radiation of any type is directed at the brain therefore the pineal gland will be unaffected.

This design is in contrast, to the infra-red thermometers (to measure boiler temperatures etc) that you can buy in B and Q as these use a laser to illuminate the area being interrogated, which is mistaken for an infra-red beam. This is omitted from the medical version as laser radiation may damage the eyes.

**2. The pineal gland is embedded deep in the brain.**

This protects it from any infra-red radiation, its location is illustrated in Figure 1. Coupled with the fact that when using medical infra-red thermometer’s no infra-red radiation is directed at the brain means the pineal gland will not be damaged.

## Pineal gland



### 3). Function of the pineal gland.

In humans the pineal gland is a calcified organ that doesn't really do much. It's much more redundant than it is in say fish, it's more of a hangover than anything. Although it does produce melatonin and is involved in the body clock.

### And 4). Infra-red light is routinely used to examine the brain in new-born babies.

Medically infra-red radiation is often beamed into the brains of new-born babies to measure whether an oxygen supply and there is no evidence that it affects the function of the brain.



In summary the notion that infra-red thermometers affect the function of the brain is false as they are passive devices that do not produce any radiation themselves (**Point 1**) and if they did (which they don't) it would not affect the function of the brain/ pineal gland anyway (**Points 2 through 4**).

I am a neuroscientist with over 30 years, experience in research into the development of the brain and have published over 40 papers/ book chapters. I can send you my PhD if required, I am interested in online conspiracy theories and agree with some of them but this one is impossible because of **Point 1** alone.

Dr Kevin D Broad