

Red in the Face: People use your skin colour to judge how healthy you are

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The face on the left is drained of blood and starved of oxygen, making it look pale and bluish. The face on the right looks healthy because it is flushed with blood and has lots of oxygen, making it look bright and rosy. Credit: The image is supplied by Perceptionlab.com, University of St Andrews

(PhysOrg.com) -- People use the colour of your skin to judge how healthy you are, according to researchers at the University of St Andrews.

Scientists in the School of [Psychology](#) have shown that there is truth to the received wisdom that a "rosy" complexion denotes healthiness, whilst a "green" or "pale" colour indicates illness.

Lead researcher Ian Stephen worked with the University's Perception Lab to determine how face colour is associated with healthy looks.

Several monkey species use redness in their faces or sexual [skin](#) to advertise their health status and to attract mates. The team was keen to discover whether similar mechanisms were at work in humans.

Ian Stephen said, "Parents and doctors know that when you get ill, you can end up looking pale. Our research goes further and shows that even young, healthy university students can benefit from a complexion reflecting more blood and more oxygen in the skin."

The team from the University of St Andrews first measured how skin colour varies with the amount of blood and oxygen in the blood.

These measurements were used with [computer graphics](#) to allow research participants to change the colour of the faces in the photographs to look as healthy as possible. The team found that, for all faces, participants added more oxygen rich blood colour to improve the healthy appearance.

Ian continued, "Our skin contains many tiny [blood vessels](#) that carry blood laden with oxygen to the skin cells, allowing them to 'breathe', and allowing us to lose heat during exercise. People who are physically fit and have higher levels of [sex hormones](#) have more of these blood vessels and flush easier than people who are unhealthy, unfit, elderly or smokers. Physically fit people also have more oxygen in their blood than people who are unfit or have heart or lung illnesses."

Professor Dave Perrett, head of the Perception Lab commented, "Our evaluators all thought that bright red blood with lots of oxygen looked healthier than darker, slightly bluer blood with lower oxygen levels. It is remarkable is that people can see this subtle difference.

"This may explain why some people with very red faces do not look so healthy; the colour of their blood may be wrong. So it's not just the

amount of blood that's important it's the type of blood that determines healthy looks."

The research shows that people use the colour of the blood in your skin to judge how healthy you are.

"Since your attractiveness relies upon how healthy you look, you might be able to make yourself more attractive by being kind to your heart and lungs in doing more exercise or quitting smoking," concluded Ian Stephen.

More information: The paper, 'Skin Blood Perfusion and Oxygenation Colour Affect Perceived Human Health' by Ian D Stephen, Vinet Coetzee, Miriam Law Smith and David I Perrett is published in PLoS ONE today: [dx.plos.org/10.1371/journal.pone.0005083](https://doi.org/10.1371/journal.pone.0005083)

Provided by University of St Andrews

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