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Skin is not just “the wrapping paper that covers the presents,” says Dr Monty Lyman, author of the award-winning book, The Remarkable Life of the Skin. Essential in protection, excretion, detection of pressure and pain, production of vitamin D, and temperature control, the skin really is a remarkable structure

Both wide-ranging in its breadth and intricate in its detail, Monty’s book covers everything from sweat to cellulite, herpes to henna and tickling to telling the time (through your skin). With an index that includes Desmond Tutu and tattoos, the Sistine Chapel and sexual touch, here are some of the gems that sparkle from its pages, shared with Monty’s permission.

1. Weakened walls = eczema

Your skin is your body’s armour. Despite being continuously attacked by microorganisms, irradiated by sunlight, and exposed to environmental chemicals, skin keeps us, for the most part, completely covered.

With eczema [4] though, the skin is itchy, red, dry and cracked. Long thought to be a purely “inside-out” condition, with an internal imbalance in the immune system damaging the skin, Monty suggests, with the help of scientific studies, an additional “outside-in” model for eczema.

Defects in the skin’s structure, caused by loss of a protein building block due to a damaged gene, allow air-borne microbes to enter in and water to leak out; eczema results.

2. Midnight feasts and sunburn

Deep inside the brain, in the hypothalamus, are “masterclock cells” which connect to the back of the eye. When light falls on the retina in the eye, it triggers a rhythmical activity of the masterclock cells that drives body clocks [5] in many other organs—rather like a conductor in an orchestra.

The skin [6] has patterns of activity that are informed by this master regulator. Monty explains how overnight, cells in the outer layer of our skin multiply rapidly, “preparing and protecting our outer barrier for the sunlight and scratches of the coming day”.

During the day, the cells instead concentrate on defending against the sun’s ultraviolet rays. If we eat late at night, “our skin’s clock assumes that it must be dinner time and so pushes back the activation of the morning-UV-protection genes, leaving us more exposed the next day.” Sunburn may result!

3. Sweat is a love potion

Smells, it seem, can be very seductive—and expensive perfumes are not the only answer. Oxytocin [7], for example, is a brain chemical which, when sniffed in the name of science, made people appear more attractive to each other (perhaps triggering a rise in dopamine, the brain chemical associated with feelings of reward and pleasure).

Sweat, meanwhile, is a natural “eau de parfum” according to Monty, and, remarkably, we’re wired to prefer the sweat of genetically dissimilar people which could be key in survival. Children born to parents with differences in genes that control the scope of their immune system have a more varied, and often stronger, immune system. “Our skin-nose communication, enabled by our skin’s sweat glands, could actually be saving us from extinction,” says Monty.

Top dating tip, then—smell his sweat?

4. Cellulite and the sexes

Why cellulite appears in 90 per cent of women and only ten per cent of men is another of Monty’s musings. Describing the layer of fat that lies beneath our skin (essential in energy storage and insulation), the “columns of collagen fibres” that run from the skin through the fat to the deeper muscles are thought to be to blame.

In women, “these fibres are arranged in parallel, like the columns of a Greek temple”, and fat cells manage to push upwards, forming cellulite. “Men, on the other hand, have criss-crossed collagen fibres resembling pointed Gothic arches, keeping the fat locked deep inside.”

If the sight of cellulite conjures up images of Greek temples, perhaps you can learn to love it—or at least see it as a helpful lesson in anatomy.

5. Familiar yet mysterious

Skin is both, says Monty. Supposedly silly questions can reveal complicated truths about our inner workings. Why are we unable to self-tickle? It’s because our brain can “exert a subconscious force on our physical feelings that we cannot control”. Why do “sparks fly when we touch”? It’s because “our discriminative and emotional touch-systems kick into action simultaneously”. Does chocolate cause acne? Is food excreted in sweat? Find out for yourself—and be amazed.

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