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Your body is an intricate system of parts that, if they fail, can have devastating effects. We take a tour through some of our lesser known, yet critical, parts.

“If I could, I would always work in silence and obscurity, and let my efforts be known by their results”, wrote the novelist and poet Emily Brontë. Many of your lesser known body parts do just that, working without being noticed – unless they are diseased or damaged. Existing even without names, until being named after the doctors and scientists who studied them, these humble body parts are really rather heroic. Let’s take an ‘awe walk’ [6] through the body and get to know some of them a little better.

The bundle of His (pronounced “hiss”)

Like a lightning bolt piercing through the sky, electric currents shoot across the heart in a fifth of a second – leaving a contraction (a heartbeat [7]) in their wake. Happening every second or so (depending on your heart rate), these powerful pulses can be picked up by an ECG recording and analysed by doctors to check for palpitations or heart attack.

The bundle of His is a bunch of conducting cells at the heart of this electrical pathway, joining the upper chambers of the heart with the two large pumping chambers below. Named after German physician Wilhelm His (1863-1934), these cells help carry the current to its final destination - the Purkinje fibres, which enlace and electrically excite the bulk of the heart. Jan Evangelista Purkinje [8] (1787-1869) was the anatomist who lent his name to this body part (as well as to large nerve cells in the back of the brain).

Broca’s area

French surgeon Pierre Paul Broca noticed, in 1861, that patients with a right-sided weakness after stroke [9] often had difficulty with language, talking in what has become known as telegraphic speech, where the content is correct, but sentences are short and stilted.

Concluding that damage to the left side of the brain (which controls movement on the right side of the body) was to

blame, an area identified as Broca's was baptised. It's now known that Broca's area can reside in either hemisphere of the brain, though usually in the dominant one (which, for right-handed people is the left hemisphere). The Broca area of the brain coordinates the multitude of muscles that make up speech, including those of the larynx, pharnyx, tongue, cheeks, lips, jaws – and even the lungs.

Working alongside Broca's area is Wernicke's area, a part of the brain that helps speech to make sense. The Stroke Association [10] identifies damage to either area as a main cause of aphasia.

Organ of Corti

Resembling delicate fingers of soft coral swaying back and forth in the sea, thousands of tiny hair cells deep inside your fluid-filled inner ear wiggle and bend as the membrane to which they are attached moves up and down (rather like a rug being shaken out) when sound is heard. Essential for hearing, these rows of hair cells form the so-called organ of Corti [11], one of the most remarkable organs of the body, named after Italian anatomist Alfonso Corti (1822-1876).

The movement of individual hair cells varies with the volume or pitch of the sound, and is translated into an electrical message to be interpreted by the brain and sensed as sound. Though protected by being inside the snail-shaped bone called the cochlea, hair cells in the organ of Corti can be damaged through loud noise, infection, and even some antibiotics, leading to deafness.

Circle of Willis

Your brain is hungry for oxygen. Making up only 2% of your total body weight, it consumes about 20% of your body's oxygen and calories, being fed through not one, but four main arteries in the neck. Every minute, almost a litre of oxygen-rich blood is pumped through your brain: interrupt flow for a few seconds, and you will lose consciousness; permanent brain damage begins after four minutes.

The arriving arteries form an elegant (though rarely complete) ring of blood vessels at the base of the brain called the Circle of Willis (after English physician and "father of neurology" Thomas Willis [12] (1621-1675)). Should one artery block, threatening a stroke, the Circle of Willis can deliver blood to the deprived side of the brain, to compensate.

The Circle also acts to absorb pressure waves in the arteries, as they pulsate with each beat of the heart. At times though, the pressure builds and aneurysms [13] (balloon-like bulges) arise in the arteries, which may then bleed.

Cowper's glands

Discomfort and dryness during sex can be relieved by lubricants [14]. Everything from egg white to yoghurt has been experimented with (but not recommended by doctors), in the pursuit of a natural solution, but did you know that your body makes its own natural lube?

Sitting right next to the well-known prostate gland are the often-neglected, lubricant-secreting Cowper's glands; similarly pea-sized Bartholin glands [15] are found just behind and either side of the lips that surround the entrance to the vagina. Named after surgeon William Cowper (1666-1709) and Danish anatomist Caspar Bartholin Secundus (1655-1738), these glands also help neutralise traces of acidic urine with their thick secretions, helping sperm survive.

Cowper though doesn't take all the credit for aiding our understanding of this body part. As with most discoveries, it takes a team, and centuries of discussion, dissection and debate to advance ideas. As far back as the sixteenth century, artist and anatomist Leonardo da Vinci [16] was drawing, and re-drawing, the reproductive system, dispelling, for one, the long-held myth that sperm travelled from the brain to the penis.

Naming body parts after men not only silences those scientists who came before, but it risks offending (where are all the women?), and often tells us very little about what the body part actually does. Arguments exist [17] on both sides for so-called eponyms to be abandoned. When writing on often-forgotten body parts though, one thing can be said: the Circle of Willis is a lot more memorable as a name than the alternative 'cerebral arterial circle'; Cowper's is recalled more readily than 'bulbourethral glands'. When your name is easily forgotten, yet you are really rather remarkable, an aide-memoire can be an advantage.

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