

EMSJ



Bents Fruit & Veg Display



Bents Butterfly House



Bents Elfie Selfie Booth



Bents Letter From Father Christmas



Bents Houseplant Banners






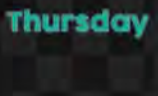
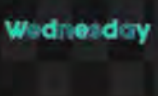


The Skills Network - Stands




The Skills Network - Office Graphics





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WATCH: 92-year-old reveals maths GCSE result on air

Teenagers across the country have been finding out their GCSE results today and so has 92-year-old Derek Skipper.


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19 hours ago · BBC News · UK

“I think the answer is – why not?”

Derek Skipper

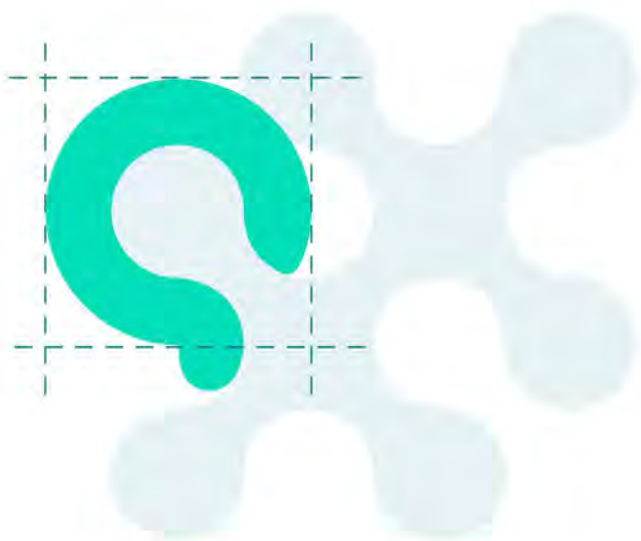
When someone asks how many CPDs they can do with us...

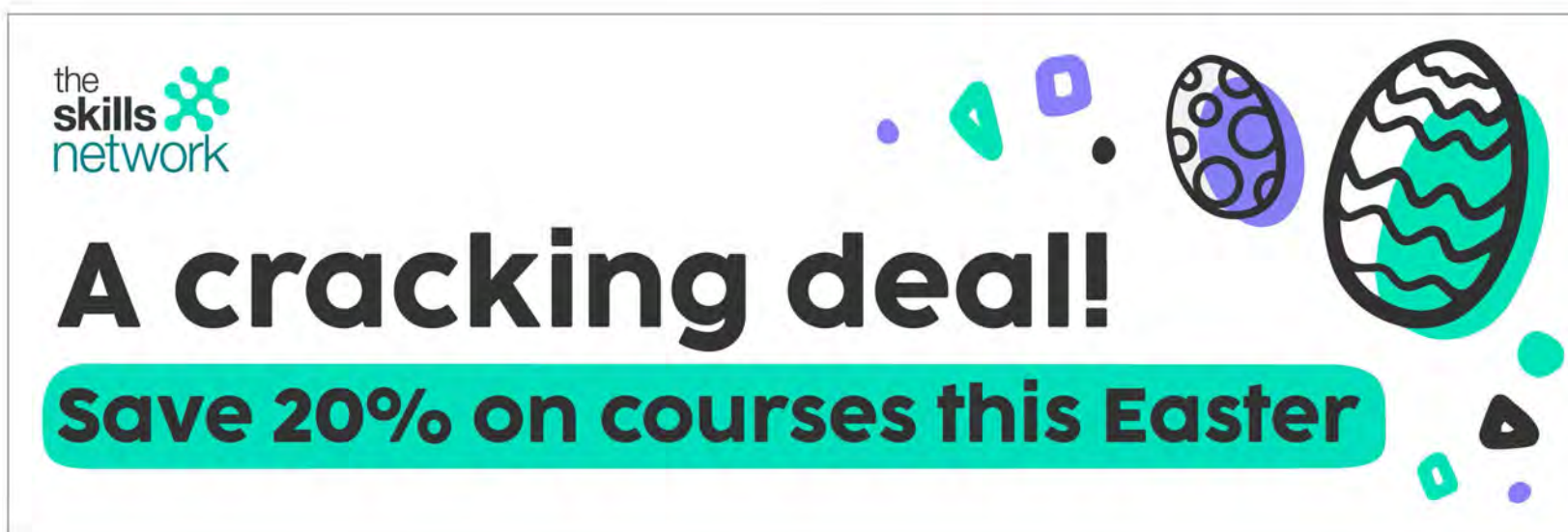
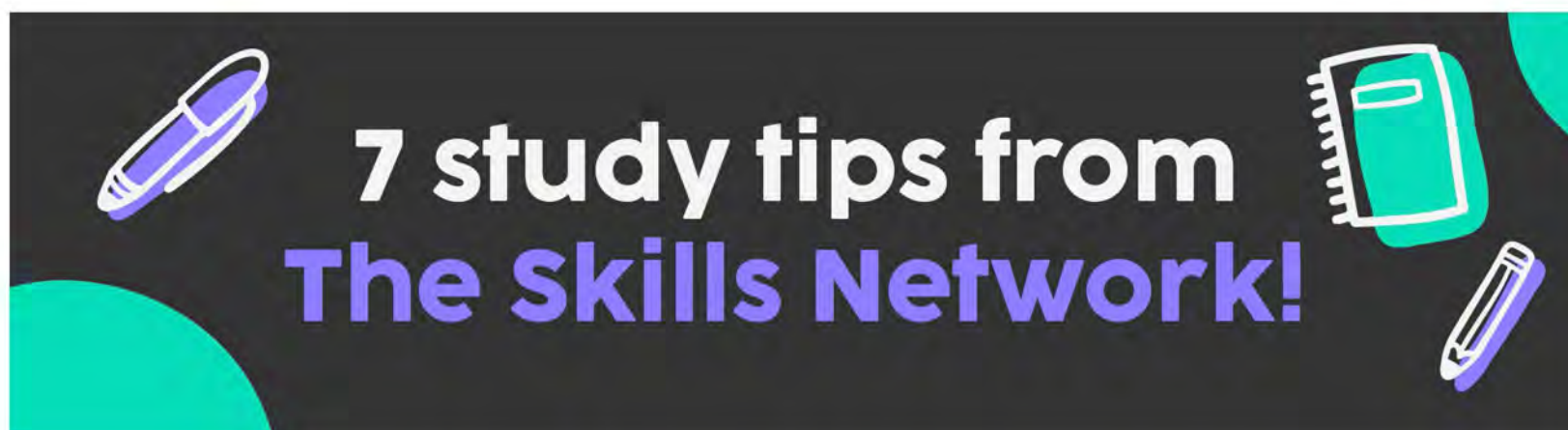


The limit does not exist.



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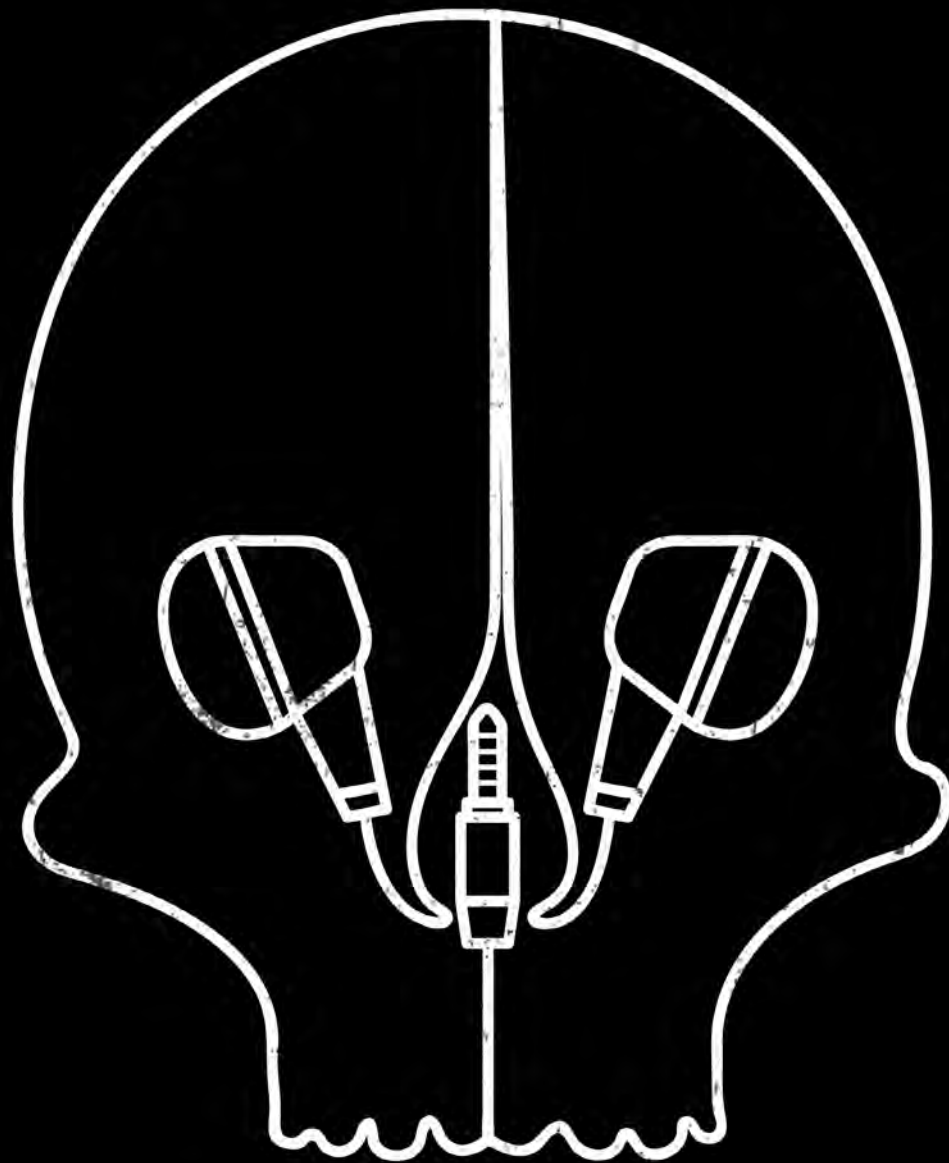


Every year **6,000** children are diagnosed with serious heart conditions.
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#connectinghearts

@emsjcreative

IF A FANTASIST TOLD YOU THEY'D KILLED SOMEONE...
WOULD YOU BELIEVE THEM?



TRANSFERENCE

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STORIES

the Pathologist

Upfront

The nose knows when it comes to lung cancer

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In My View

Blurred research boundaries require organizational change

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In Practice

The patient's perspective on medical research

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Profession

A pathology school for trainees with limited access

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Pathology on a Shoestring

How can we provide the best care in settings with the fewest resources?

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the Pathologist

In My View

Basic laboratory tests are not so simple in cancer patients

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In Practice

Working with automation to meet microbiology needs

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NextGen

POCT distinguishes bacterial from viral infection

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Profession

An online marketplace for experimental outsourcing

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Animal Instincts

Meet the furry assistants who are proving valuable in early cancer diagnosis

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JANUARY 2017# 37

the
Ophthalmologist

Upfront
Ranibizumab vs. aflibercept
in the real world

In My View
Would and should you perform
bilateral cataract surgery?

NextGen
A new perspective on
combating presbyopia

Sitting Down With
Family Man,
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Refractive Surgery's
Holy Grail

Eyedrops for presbyopia.
Myth or medicine?

16–27

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Feature

Feature

Appreciating the anatomy

To understand how drugs might be used to treat presbyopia, it's worthwhile considering the main anatomical units involved in accommodation: the ciliary muscle, lens and zonular fibers.

The ciliary muscle is predominantly under parasympathetic control, with sympathetic innervation playing a minor role in relaxation only (by inhibiting accommodation). The contraction of the ciliary muscle alters the shape and position of the lens, thereby invoking the accommodative capacity. Notably, the ciliary muscle also contains muscarinic-3 acetylcholine receptors (M₃).

It's important to note that the iris is also under heavy influence of the parasympathetic system – cholinergic stimulation of the M₃ receptors on the iris sphincter muscle causes miosis. Conversely, the iris dilator muscle is sympathetically innervated and contains α -adrenergic receptors. If these receptors are antagonized, it allows the parasympathetically innervated pupillary sphincter to predominate (as it is unopposed), resulting in miosis.

Depth of focus: the pinhole effect

Most pharmacological approaches for the treatment of presbyopia are based on reducing the aperture of the pupil. Small aperture optics have long been known to increase near visual acuity (VA) by increasing the depth of focus. Peripheral light waves are most distorted by refractive error: by blocking these and allowing only the most central rays of light to reach the retina, this results in not only clearer vision, but also an increase in the depth of field of clear vision. It's this principle that underpins the surgical approaches of AcuFocus' small aperture corneal inlays and intraocular lenses (IOLs). Their Kamra corneal inlay features a central 1.6 mm aperture (a size AcuFocus claim achieves an expanded depth of focus without significant visual degradation) and their IC-8 IOL contains a 1.36 mm central aperture and is implanted in the non-dominant eye – and has shown promising early results. Clearly, for a pharmacological option to be successful it must create a similar and long-lasting effect on pupil size (3).

However, manipulating pupil size is not without undesired consequences. A constricted pupil (understandably) decreases vision at night – less light enters the eye, and diffraction at very small pupil sizes can degrade overall vision quality. For elderly patients in particular, decreasing the amount of light falling on the retina worsens vision.

Understanding accommodation

To appreciate why some pharmacological formulations may or may not work in presbyopia, it is essential to understand accommodation. Accommodation isn't a completely settled topic: there are a number of competing theories that seek to explain the mechanism(s), with Hermann von Helmholtz's 166 year-old theory being the most widely accepted.

Von Helmholtz suggested that when the eye is at rest and focused for distance, the ciliary muscle is relaxed (Figure 1). To focus on a near object, the ciliary muscle contracts, causing the ciliary body to move forward and towards the axis of the eye. Simultaneously, the tension of the zonular fibers around the lens

equator relaxes, which allows a soft lens to be molded by the elastic capsule into a more spherical and accommodative form. A larger, stiffer lens – such as one that arises from ageing – will not change shape as much, thereby compromising accommodation.

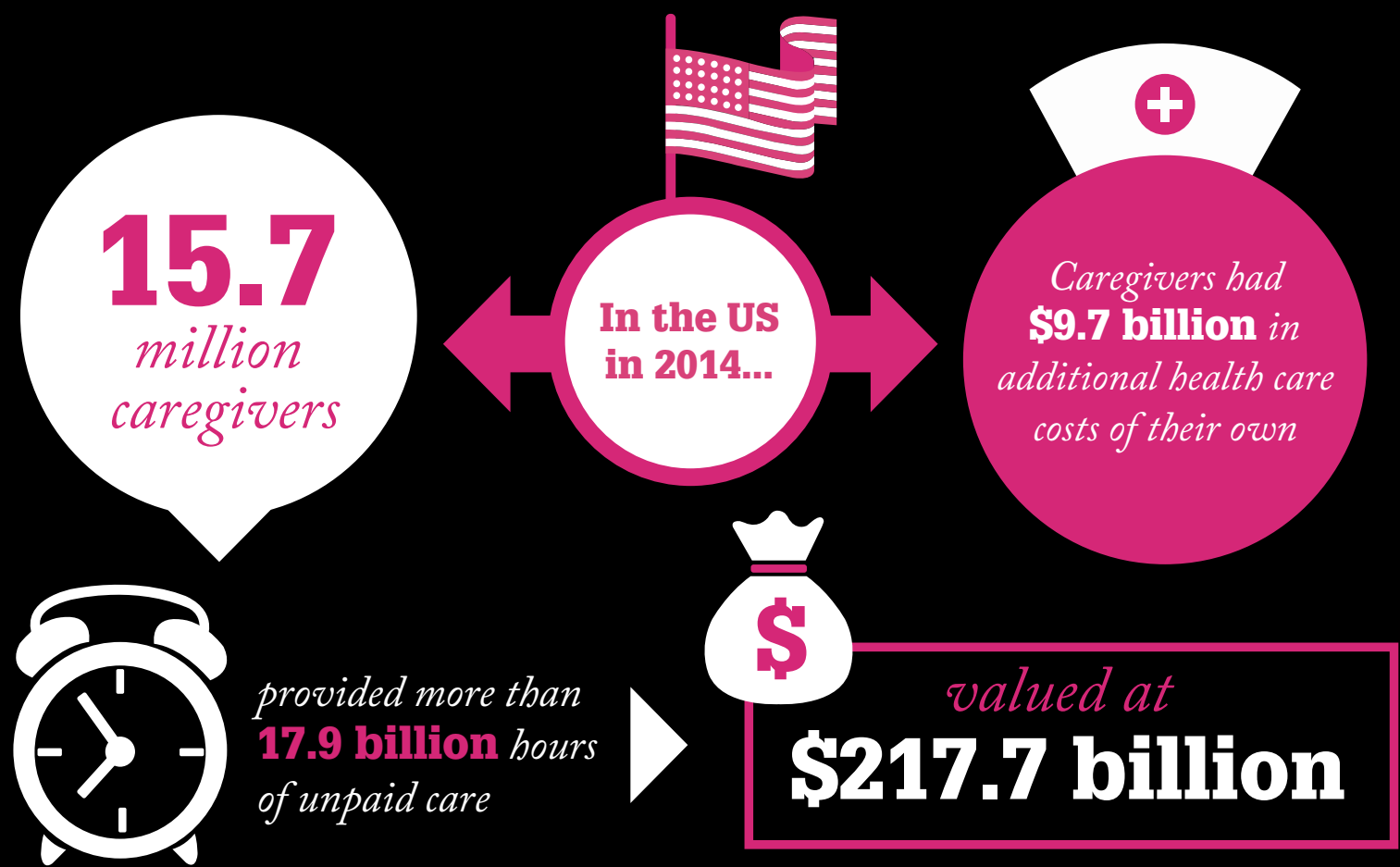
Ronald Schachar proposed an alternative theory: that only the equatorial zonules are under tension during accommodation (Figure 1). When the ciliary muscle contracts, equatorial zonular tension is increased, causing the central surfaces of the crystalline lens to steepen, the central thickness of the lens to increase, and the peripheral surfaces of the lens to flatten. The increased equatorial zonular tension keeps the lens stable and flattens the peripheral lens surface during accommodation. In this scenario, presbyopia occurs because the equatorial diameter increases with age. However, this theory is opposed by the well-documented occurrence of lens stiffening and failure of scleral surgical approaches (which are based on Schachar's theory) to correct presbyopia. Furthermore, studies have shown that it is axial thickness that is increased and not equatorial diameter.

Ophthalmologist

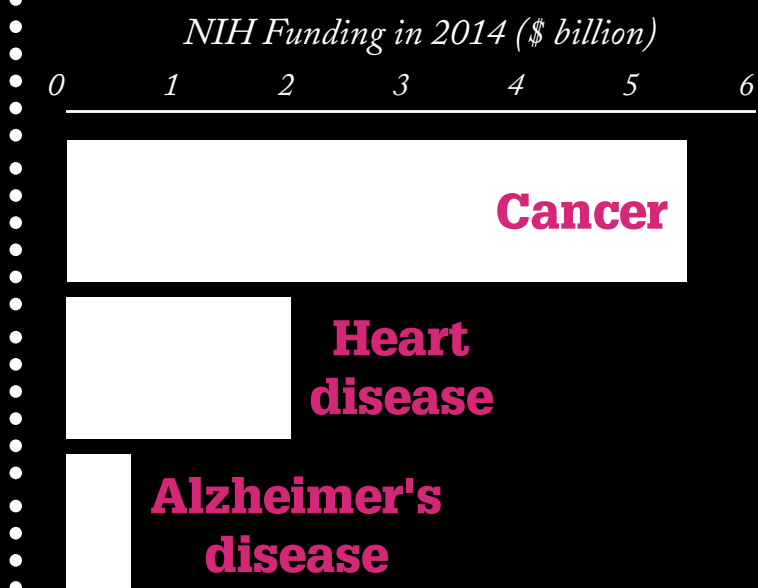
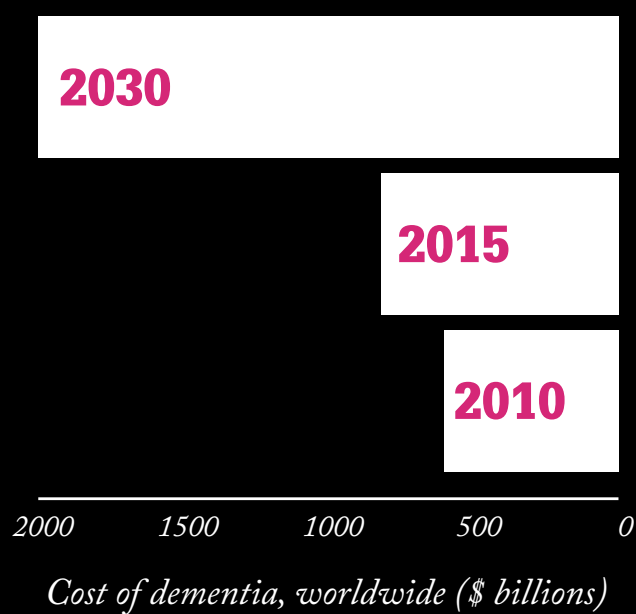
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Texere Publishing - Artwork

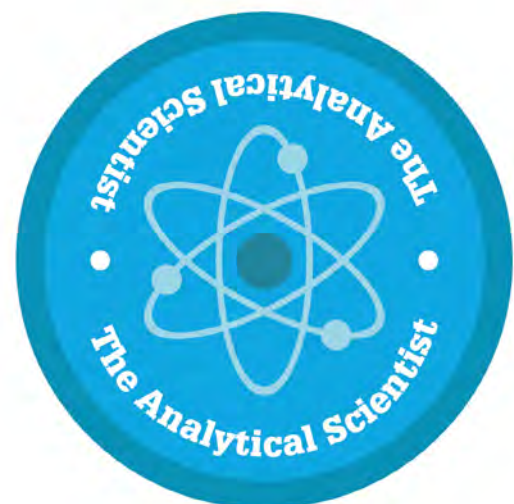
Counting the Costs



Spiralling costs



The funding gap





Lever Street Challenge - Type of XMAS







The Festive Period - MA Project

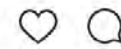
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need a quick way
to get on Santa's
good list?



thefestiveperiod

thefestiveperiod Join in with #TheFestivePeriod movement and we'll put in a good word with the big man himself! Help us show the world that our periods are as embarrassing as a cup of tea by sharing a picture of your festive period. Show us what foods you're craving or your preferred position for easing those cramps because the more we talk, the more normal the topic becomes.

Remember to use #TheFestivePeriod and for each post we get £1 will be donated to help provide sanitary wear for those who need it most. To find out more visit our website by clicking the link in the bio. It'll definitely buy you a few brownie points. 🍪



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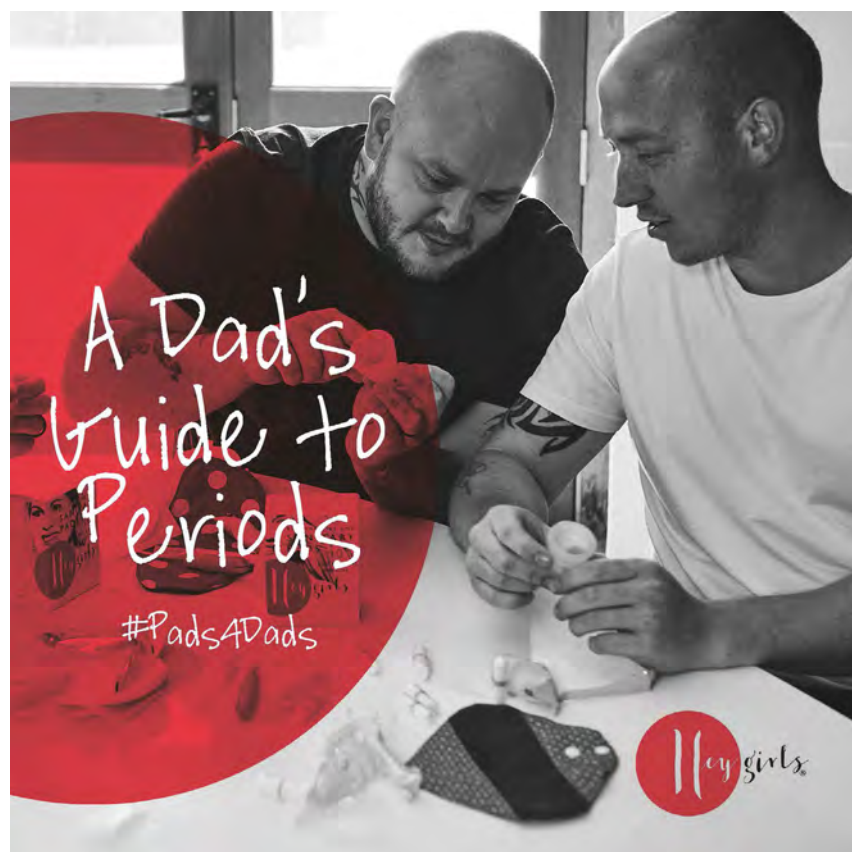
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1 in 10 girls and women in the UK suffer from
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Tampons
These go inside the vagina and are more convenient for exercise and swimming. They can be quite tricky to insert at first – some come with an applicator, others you insert with your finger. Tampons should never be worn for more than 8 hours as there is a very small risk of TSS (see glossary).

Reusable Products
There are also a range of sustainable period products. These include cloth pads and period pants which you wash and reuse. Or, there are Menstrual Cups which sit inside the vagina to collect blood. These products can all be reused over many years – they have a higher up-front price but are cheaper in the long run, and much better for the environment as they reduce waste.

Please remind her to never flush period products down the toilet – they will block your drains and clog up the waterways!



4 in 10 Dads never learnt about periods at school



Only 4% of Dads say they feel comfortable talking about periods with their kids, and nearly half haven't chatted to their daughters about them



45% of Dads are unsure what the signs are that a girl might be about to start her period



One in 3 dads have never purchased period products

Based on a survey of 1500 British men including 753 Dads by Edelman Intelligence for Hey Girls, 2019



#Pads4Dads

This resource was created by Hey Girls CIC

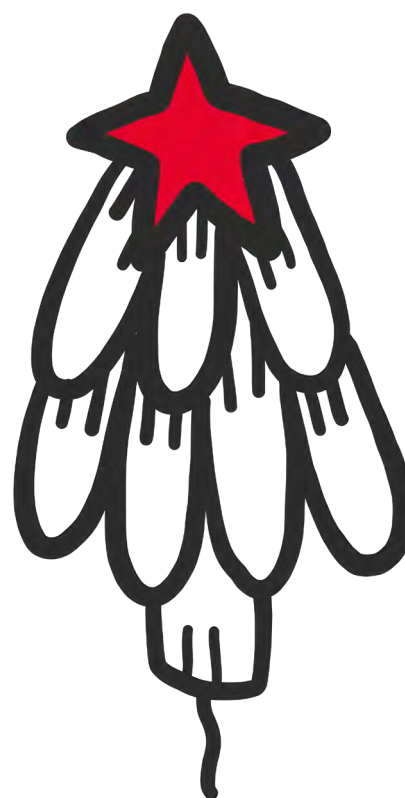
With thanks to an army of generous Dads: George, Sam, Steve, Chris, Dan, Luke, Colin, Darrin, Doug, James, Thomas, Luke, Kieran, Mark, Anthony, Jonson, Ryan, Michael, and the teams at Edelman Intelligence, Dads Rock and Dads Matter UK.

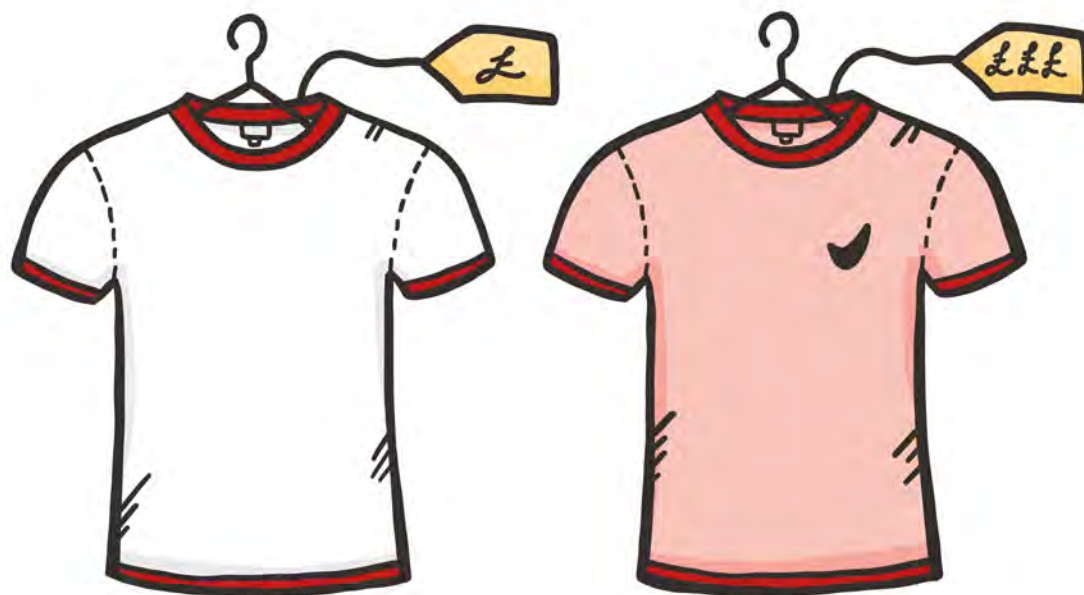
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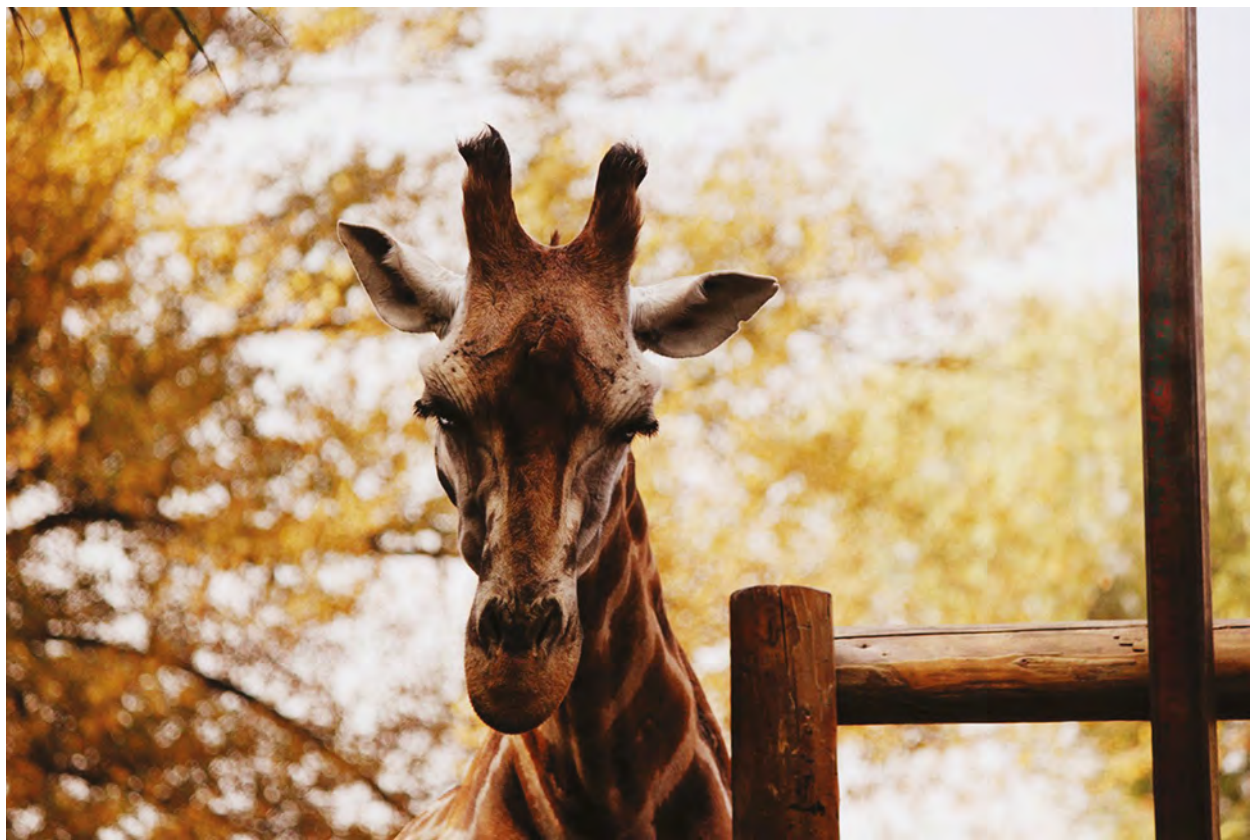
For more information and resources see www.heygirls.co.uk
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The logo consists of the letters 'EMSJ' in a bold, sans-serif font. The 'E' and 'S' are purple, while the 'M' and 'J' are dark grey. The letters are closely spaced and have a slight shadow effect.

EMSJ

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