



LEVEL 3 CERTIFICATE/DIPLOMA

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MEDICAL SCIENCE

Unit 1: Human Health and Disease

**Pre-Release Article for use in the following
examinations on Monday, 19 May 2025**

Level 3 Diploma in Medical Science

Level 3 Certificate in Medical Science

Adapted from an article from: www.bbc.co.uk/news/uk-england-hampshire-65619247

Cheap blood pressure drug could treat acne, study finds.

17/05/2023

A cheap drug, used to treat high blood pressure, could help thousands of women suffering from persistent acne, according to a new study.

More than 400 women took part in the trials led by researchers at the University of Southampton. The study found that those taking the drug saw a huge improvement after 12 weeks.

Researchers said the drug works by reducing the main hormone that leads to the development of acne.

“Results show that the women taking the drug saw a significant improvement in their acne after 12 and 24 weeks compared to those on the placebo,” said the co-lead of the trial.

She said this drug could offer an alternative to antibiotics for many women with persistent acne to use alongside topical acne treatments.

One patient, 39, began suffering with severe acne in her teens and was prescribed creams and antibiotics, as well as the contraceptive pill to try and control it. She said: “Nothing seemed to work. It might go away for a while but then it would flare up again.” She said the effects were physical and psychological. “It was embarrassing” she explained, adding: “People would stare and you almost feel that they’re looking at you like you’re dirty and don’t wash properly. It used to get me down. I’m a confident person but my skin just took over how I felt a lot of the time.”

She was told about the adult female acne drug trial by her dermatologist and contacted the trial team at the hospital.

“Initially I started on the lower dose and there was an improvement,” she said. “I then went onto the higher dose and within about three months everything was gone, all the spots had disappeared.”

Since the trials she has stayed on the drug and has been acne-free for more than two years. She said: “I hope that other people will now be given this treatment as an option instead of just trying the antibiotics.”

ACNE

Acne is a common skin condition that affects most people at some point in their lives. It causes spots, oily skin and sometimes skin that is hot or painful to touch.

Figure 1: Acne on face



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SYMPTOMS

Acne most commonly develops on the face, chest and back. See FIGURE 2 opposite.

CAUSES

Acne is caused when hair follicles become blocked when the sebaceous glands produce too much sebum. The excess sebum mixes with dead skin cells forming a plug in the follicle.

If the plugged follicle is close to the surface of the skin, it bulges outwards, creating a whitehead. Alternatively, the plugged follicle can be open to the skin, creating a blackhead.

Harmless bacteria that live on the skin can infect the plugged follicles causing papules, pustules, nodules or cysts.

Teenage acne is thought to be triggered by increased levels of hormones during puberty. Sebaceous glands are particularly sensitive to hormones. It is thought that increased hormone levels cause the glands to produce much more sebum than the skin needs.

Acne can run in families. If both parents had acne, then the child is more likely to have severe acne at an early age. If at least one parent had adult acne, then the child is more likely to get adult acne too.

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Women are more likely to have adult acne than men. It can be caused by changes in hormone levels, including during periods, pregnancy and polycystic ovary syndrome.

If acne starts suddenly in adult women, it can be a sign of a hormonal imbalance, especially if it's accompanied by other symptoms such as excessive body hair and irregular or light periods.

Other possible triggers of an acne flare-up include:

- **some cosmetic products**
- **certain medications**
- **smoking**
- **diets with a high glycaemic index**

DIAGNOSIS

A GP can diagnose acne by looking at the skin. This involves examining the face, chest and back for the different types of spots. The severity of the acne will determine the treatment.

The severity of acne is often categorised as:

- **mild – mostly whiteheads and blackheads, with a few papules and pustules.**
- **moderate – more widespread whiteheads and blackheads, with many papules and pustules.**
- **severe – lots of large, painful papules, pustules, nodules or cysts; with some scarring.**

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TREATMENT

Treatment for acne depends on how severe it is. It can take several months of treatment before acne symptoms improve and very severe cases may be referred to a dermatologist.

Figure 3: Table showing the main group of drug treatments for different severities of acne

Treatment	
Mild acne	Moderate to severe acne
over-the-counter treatments	Prescription medication such as: • topical retinoids • topical antibiotics • azelaic acid • antibiotic tablets • hormonal treatments

OVER-THE-COUNTER TREATMENTS, FOR EXAMPLE GELS, CREAMS OR FACEWASHES. Many of these contain benzoyl peroxide which works as an antiseptic to reduce the number of bacteria on the surface of the skin. Benzoyl peroxide also helps to reduce the number of whiteheads and blackheads, and has an anti-inflammatory effect. These treatments are usually a 6-week course. Side effects include making the face more sensitive to UV light, so users should avoid too much sun and should wear sun cream.

TOPICAL RETINOIDS. These work by removing dead skin cells from the surface of the skin, which helps prevent them forming a plug within hair follicles. A 6-week course is usually required. Side effects include making the face more sensitive to UV light so users should avoid excessive exposure to sunlight. They are not suitable for use during pregnancy as there is a risk that they might cause birth defects.

TOPICAL ANTIBIOTICS. These help to kill the bacteria on the skin that can infect plugged hair follicles. They are available as lotions or gels and a minimum course of 6 weeks is recommended. The treatment is usually stopped after 8 weeks to prevent the bacteria from developing antibiotic resistance. Side effects are uncommon but can include minor irritation, redness, burning and peeling of the skin.

AZELAIC ACID. This works by getting rid of dead skin and killing bacteria and is available as a cream or gel. It is used if the patient finds the side effects of benzoyl peroxide or topical retinoids too irritating or painful. Azelaic acid is usually used for a month before the acne improves and can cause some side effects which include burning, stinging, itching, dryness and redness of the skin.

ANTIBIOTIC TABLETS. These are usually used in combination with a topical treatment to treat more severe acne. A 6-week course is usually needed before an improvement is seen and the treatment can continue for 4 to 6 months. Side effects of antibiotic use include sensitivity to UV light and making the contraceptive pill less effective during the first few weeks of treatment.

CO-CYPRINDIOL. This is a hormonal treatment that can be used for more severe acne that does not respond to antibiotics. It helps to reduce the production of sebum. A course of 2 to 6 months is usually needed before a significant improvement in acne is seen. There is a chance that the treatment could cause headaches, mood changes, weight changes and thrombosis. There is also a small risk that patients taking co-cyprindiol may develop breast cancer in later life.

There are many other treatments for acne. These include photodynamic therapy, use of a comedone extractor and chemical peels.

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REDUCING ACNE

There are a few things that can be done to reduce the symptoms of acne, these include:

- **Washing the face properly but not too often. This removes any excess sebum, dirt and oil that can block the hair follicles and cause spots.**
- **Using a moisturiser to keep the skin hydrated. Dry skin can produce more sebum which can cause spots.**
- **Drinking plenty of water to keep hydrated and to help prevent dry skin.**
- **Using over-the-counter treatments to heal spots.**
- **Not popping or squeezing spots.**
- **Not touching the face. Touching the skin will transfer any bacteria to skin which can contribute to infecting the hair follicles.**
- **Using natural remedies such as tea tree oil, which is an effective antiseptic treatment.**

ACNE FACTS

Acne is not caused by having dirty skin or poor hygiene.

Squeezing blackheads, whiteheads and spots is not the best way to get rid of acne as it can make symptoms worse and leave scarring on the skin.

There is no evidence that exposure to UV light, such as using sunbeds, can improve acne. Many of the medications used to treat acne make the skin more sensitive to UV light, therefore exposure could cause more damage to the skin.

Acne is not infectious and cannot be passed on to other people.

Using toothpaste to dry up individual spots is not an effective treatment.

The percentage of acne sufferers is higher in cities than in rural areas.

ACNE STATISTICS

Figure 4: Graph showing the percentage of people with all types of acne in different age groups in the UK in 2019

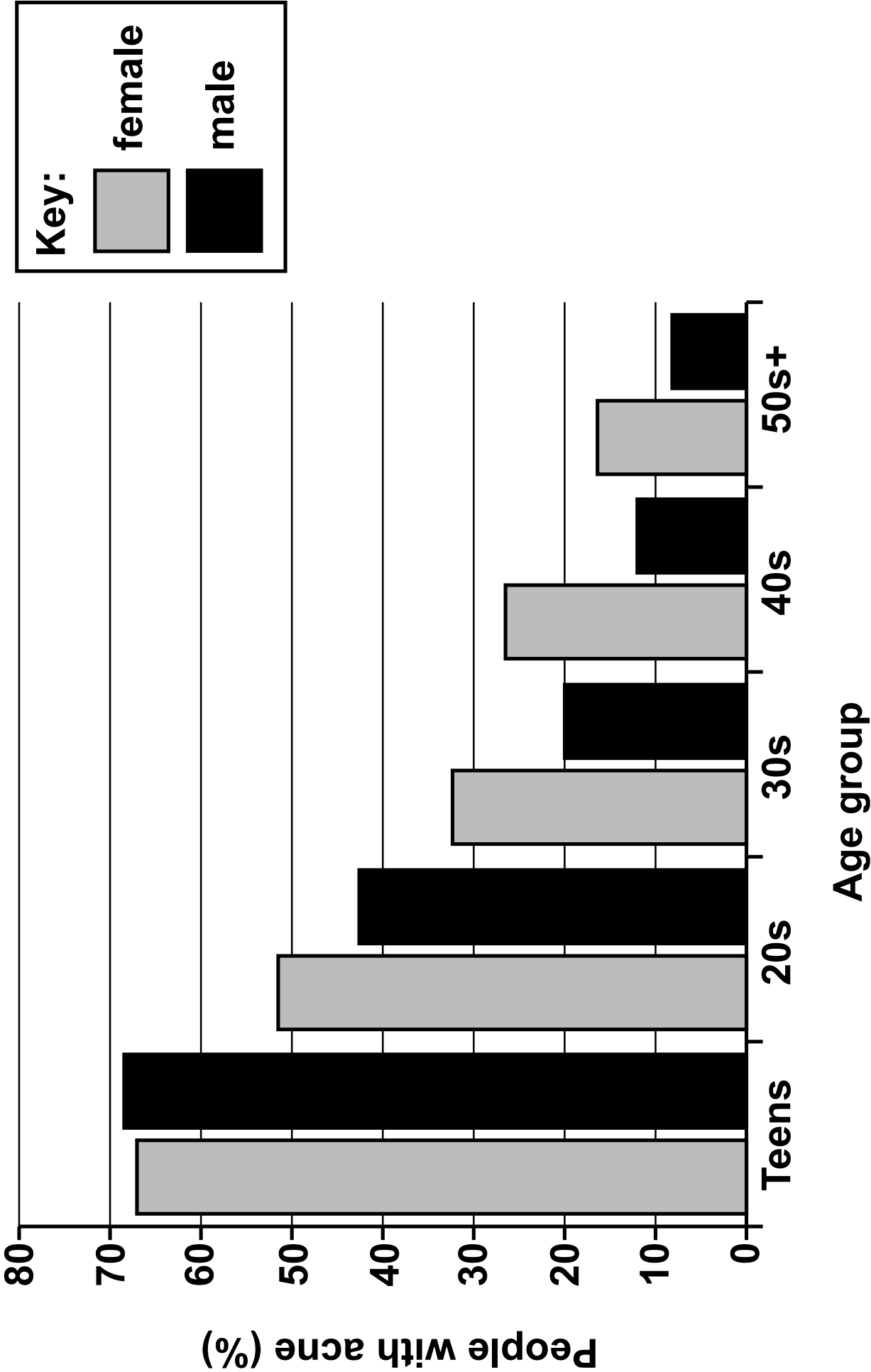
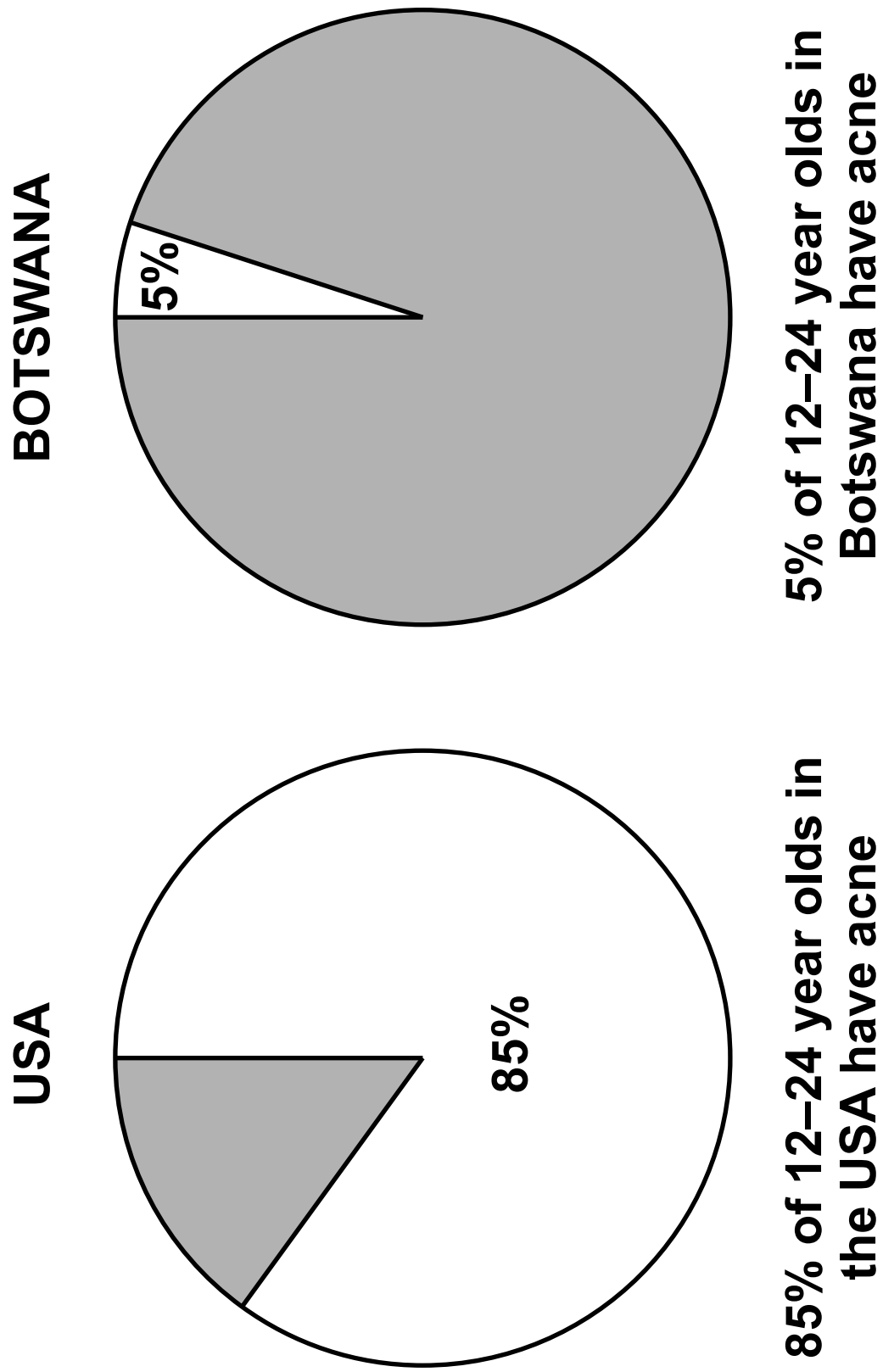


Figure 5: Graph showing the prevalence of acne in 12–24-year-olds in the USA and Botswana



Key:

individuals with acne

individuals without acne

FIGURE 2: The six types of spots caused by acne

