What's New In Alopecia Areata?

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▸ special interest in hair loss

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PRESENTATION OUTLINE

▸ What's new in how alopecia develops?

▸ What's new in treatment?

       ▸ JAK inhibitors

       ▸ probiotics

WHAT'S CAUSING ALOPECIA AREATA?

▸ patches of hair follicles lose their immune privilege and are attacked by the immune system

▸ suppress the immune system or reverse the loss of immune privilege and AA goes away
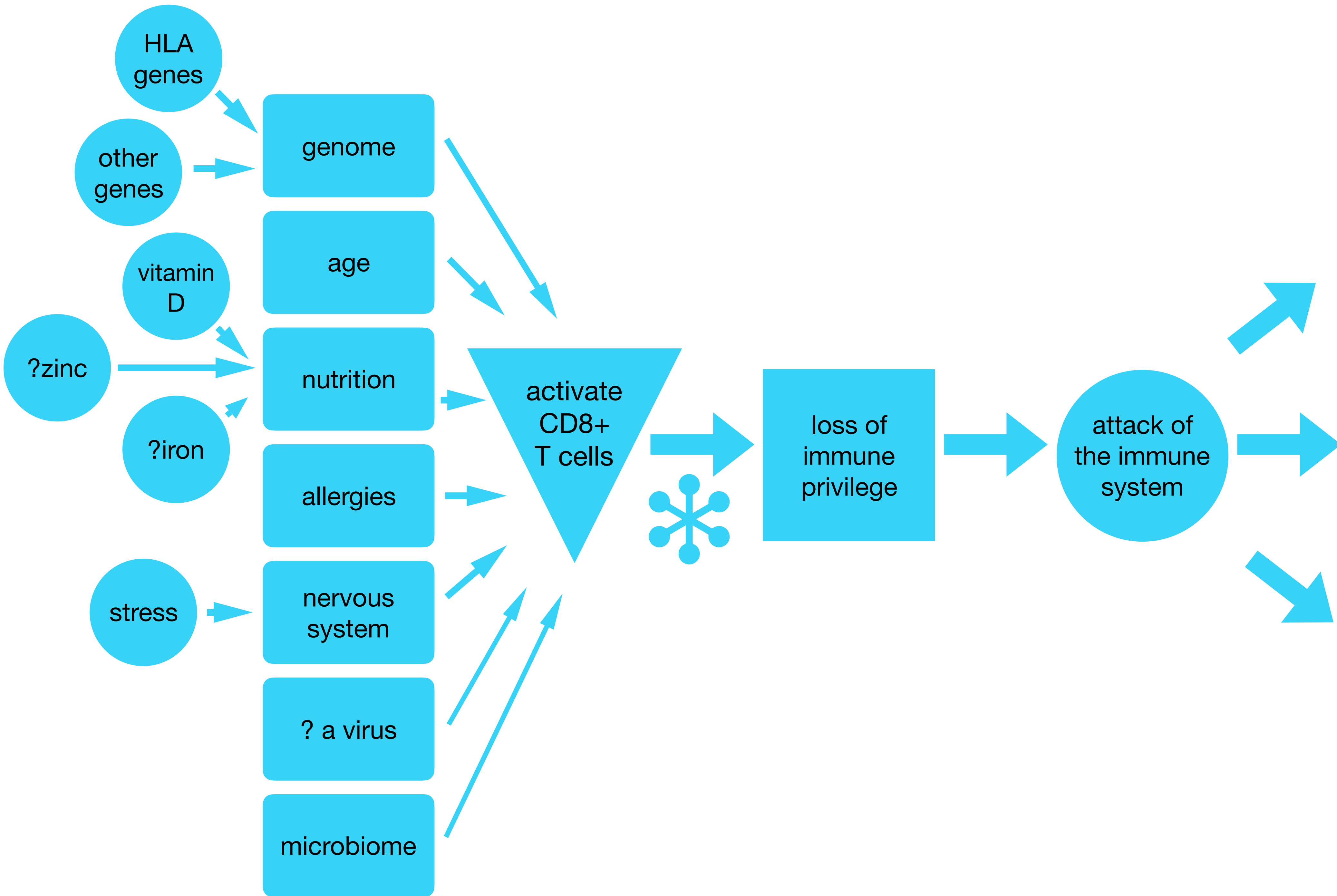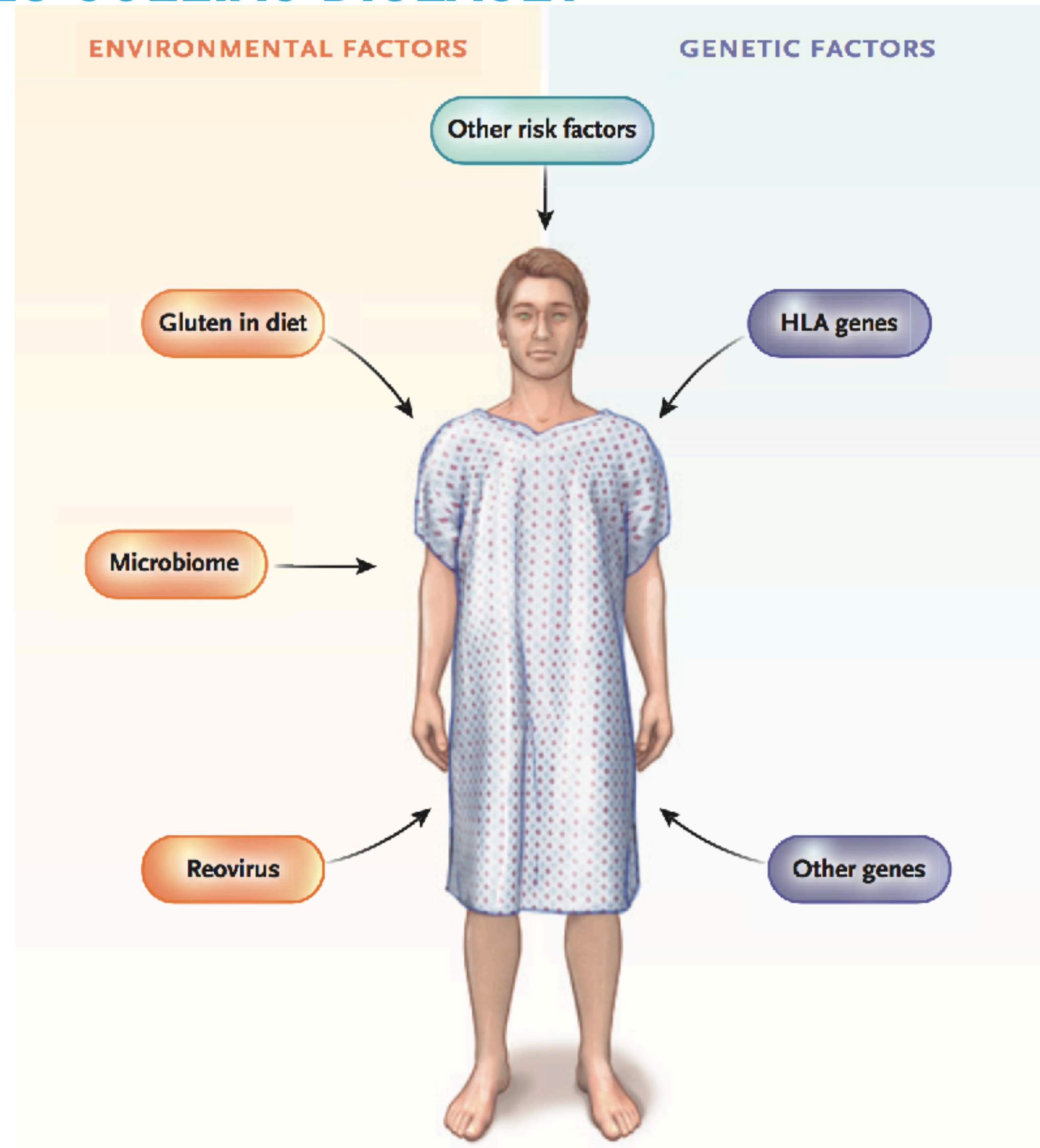
HOW BADLY DO WE GET THE FLU? IT DEPENDS

age

other medical conditions

nutrition

immune system

run down or not

WHAT CAUSES COELIAC DISEASE?

Alopecia Areata Treatments

AVAILABLE TREATMENTS

- IMMUNOSUPRESSION
    - TOPICAL STEROIDS
    - STEROID INJECTIONS
    - TABLETS
        - STEROIDS
        - AZATHIOPRINE
        - CYCLOSPORIN
- IMMUNOTHERAPY
    - DPCP, SQUARIC ACID
    - TRETINOIN
    - DITHRANOL
- IMMUNE MODULATORS
    - JAK/STAT INHIBITORS
    - SIMVASTATIN WITH EZETIMIBE

- LASERS
    - EXCIMER
    - FRAXIL
    - LOW LEVEL LASER AND LED

- OTHER TREATMENTS
    - MINOXIDIL
    - NEEDLING
    - PRP
    - CALCIPOTRIOL AND VITAMIN D
    - LIQUID NITROGEN
    - FAECAL TRANSPLANT

Faecal Transplants
Probiotics
Microbiome

Probiotics could be the solution to postnatal depression: study

Psychologist and mother Miriam Wood, with her two children, Sam Wood, 4, and Reuben Wood 20 months, says anything that can help prevent postnatal depression is fantastic. Photo/Michael Craig

PROBIOTICS, THE MICROBIOME AND FAECAL TRANSPLANTS

▸ 10,000,000,000,000 cells in the human body

▸ 90% are bacteria, mostly in the intestines, also the skin and teeth

▸ altering the bowel bacteria (AKA microbiome) can:

   ▸ affect bowel function

   ▸ improve eczema

   ▸ affect our mood and mental state

   ▸ change our body mass index

   ▸ improve our heart function

   ▸ boost our nutrient level (biotin and B12)

Faecal Transplants & Alopecia Areata Two Case Studies

# PROBIOTICS, THE MICROBIOME AND FAECAL TRANSPLANTS

▸ Clostridium difficile is a serious bowel infection

▸ Antibiotics often do not work

▸ Faecal transplants can overpower and clear C diff

▸ As we know this change in the microbiome can have other effects

    ▸ weight gain

    ▸ an effect on alopecia

FAECAL MICROBIOTA TRANSPLANTS (FMT) AND ALOPECIA AREATA

▸ Two case reports described

▸ Case One

  ▸ 38 year old man with 10 years of alopecia universalis unresponsive to steroid injections

  ▸ C diff not responsive to multiple antibiotics

  ▸ 8 weeks after FMT noted new hair on head, face and arms

  ▸ patchy regrowth 3 years later
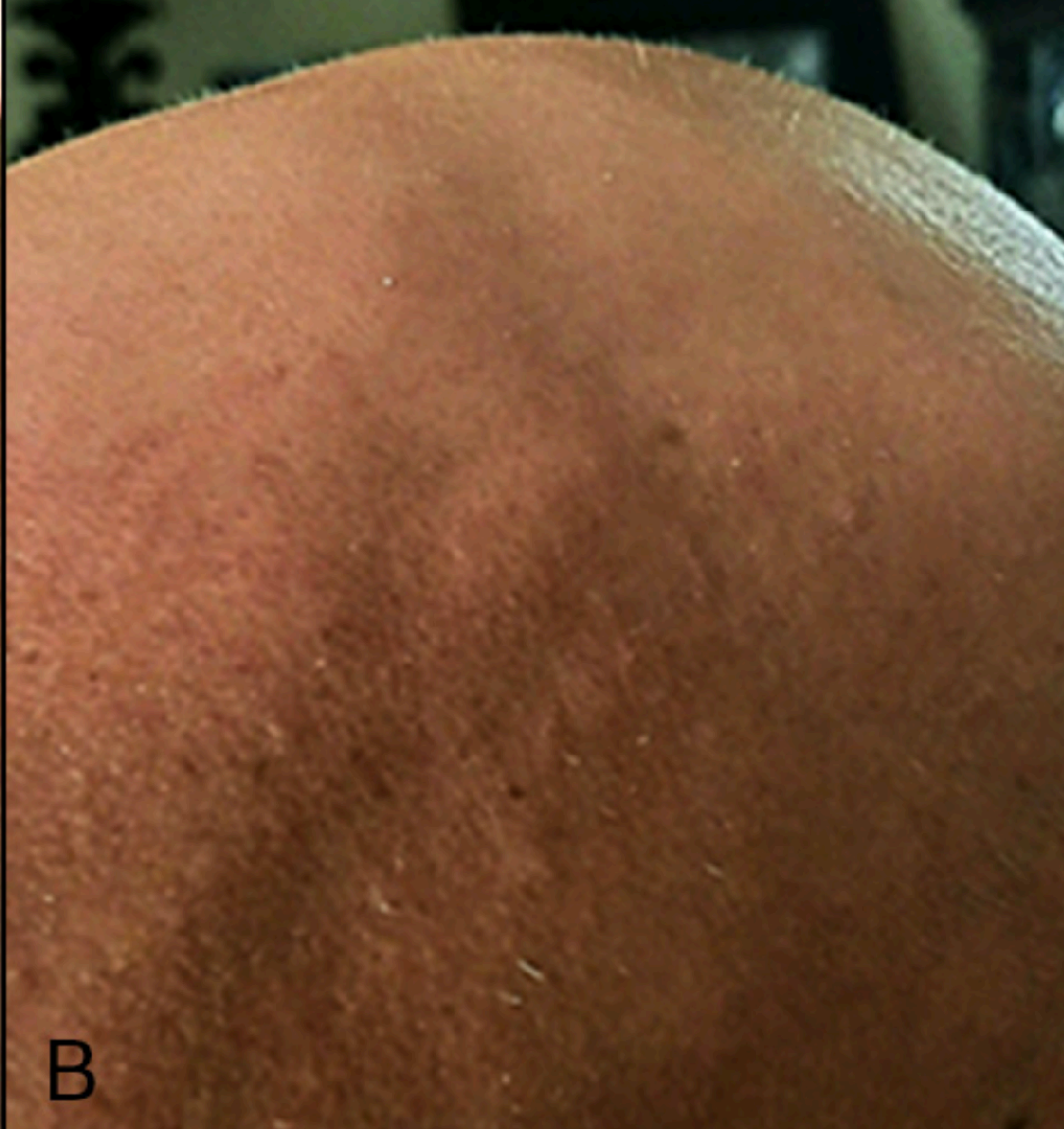
A
B

FAECAL MICROBIOTA TRANSPLANTS (FMT) AND ALOPECIA AREATA

▸ Two case reports described

▸ Case Two

    ▸ 20 year old man with 2 years of alopecia universalis unresponsive to steroid injections, laser and squaric acid immunotherapy

    ▸ C diff not responsive to multiple antibiotics

    ▸ After FMT noted new hair on head, face and arms

Hair regrowth on a 20-year-old patient's scalp after FMT. (A) The patient's scalp when he first started losing his hair at age 16. The patient's scalp (B) a few months and (C) 1.5 years after FMT.

Faecal Transplants & Alopecia Areata What's going on?

FMT AND AA – WHAT'S GOING ON?

▸ No one knows for sure

▸ What do we know?

  ▸ our gut microbiomes have changed over the last 60 years

    ▸ antibiotic use

    ▸ less farm, animal contact and exposure to dirt

    ▸ high fat low fibre diets (prebiotics)

    ▸ more caesarian sections

    ▸ chemical exposure (roundup, aspartame, disinfectants)

    ▸ are we in the middle of a microbiome change pandemic?

FMT AND AA – WHAT'S GOING ON?

▸ No one knows for sure what an ideal microbiome is

  ▸ the jungle microbiome may not be the best for us

  ▸ the microbiome of 20,000 years ago may not be best for us

  ▸ microbiome changes as we age

    ▸ older adults with a younger microbiome are healthier

FMT AND AA – WHAT'S GOING ON?

▸ Which bacteria?

　　▸ Lactobacillus rhamnosus HN001 and postnatal depression

　　▸ Lactobacillus rhamnosus LGG and eczema

　　▸ Saccharomyces boulardii and heart function

　　▸ Eubacterium ventriosum, Ruminococcus torques and weight ↓

　　▸ Subdoligranulum variabile and Dorea longicatena and weight ↑

Our Microbiome & Alopecia Areata What to do today?

FMT AND AA – WHAT CAN WE DO TODAY?

▸ <u>Trial and error to find the good and bad bacteria</u>

▸ In the meantime:

    ▸ prebiotics

        ▸ soluble fibre, fat, processed carbs, artificial sweeteners

    ▸ probiotics

        ▸ capsules and powders

        ▸ fermented food (yoghurt, kimchi, sauerkraut, keffir)

        ▸ faecal transplant

        ▸ more dirt exposure, avoid all antibacterial soaps etc

IMMUNE MODULATORS

BIOLOGICS – IMMUNE MODULATORS

▶ more precise than steroids, only suppress part of the immune system

▶ different ones affect different parts of the immune system

▶ fewer side effects than steroids but serious infections and rare cancers are possible

▶ much much more expensive than steroids

JAK INHIBITORS

▸ Janus kinase inhibitors

▸ JAK/STAT pathway is a part of
the immune system

▸ crucial part of AA

▸ 3 types JAK 1, 2 and 3

JAK INHIBITORS

▸ Two currently developed

▸ Ruxolitinib for myelofibrosis

▸ Tofacitinib for rheumatoid arthritis

JAK 1/2 INHIBITOR RUXOLITINIB

▸ 12 patients at Cleveland Clinic

▸ 9 got more than 50% regrowth

▸ 3 got minimal results

▸ one patient stopped because of a rash, one with pneumonia, one with anaemia

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Baseline

Week 12

JAK 1/3 INHIBITOR TOFACITINIB

▸ 66 patients, Yale Medical School

▸ 50% had at least 25% improvement

▸ milder cases responded better

▸ only side effects were more frequent mild infections (cold, bladder infections, bronchitis, cold sores)

TOFACITINIB

▸ 40 year old women with 5 years of patchy alopecia universalis resistant to steroid injections, steroid cream and topical anthralin

▸ almost complete hair regrowth at four months, no side effects

BUT

8 and 16 weeks after stopping

PRESENTATION OUTLINE

▸ What's new in how alopecia develops? its still unclear

▸ What's new in treatment? its still not great