


Women's Health and Technology

How we can better serve women's bodies while making excellence a habit.

September 2019

 @lizzygrand



TKS

SIDEWALK
LABS



kidogo



Microsoft



pwc



ALEPH FARMS

@lizzygrandic



Standards and schemes for certification

Aviation, Space and Defense >

AS9100, 9110, 9120

Automotive >

IATF 16949:2016 (formerly ISO/TS 16949)

Business Continuity >

ISO 22301

Cloud Security >

STAR

Energy Management >

ISO 50001

Environmental Management >

ISO 14001

Food and Drink >

ISO/FSSC 22000, HACCP

Health and Safety >

ISO 45001

Information Security >

ISO/IEC 27001

Medical Devices >

ISO 13485

Quality Management >

ISO 9001

Risk Management >

BS ISO 31000

Service Management >

ISO/IEC 20000

Telecoms >

TL 9000

1.

Testing Inclusivity

2.

Novel Sex Specific Treatments

3.

Digital Standards

4.

Involving Female Opinions

Scientifically, Women != Men

Women are **4X** more likely to get Multiple Sclerosis

2/3 Alzheimer's patients are women

80% of people with osteoporosis are women.

Women are **2X** more likely to have asthma

Female athletes are **2X** more likely to damage their ACL

Adrenal cancer is **3X** more prevalent in women than men

Women get diagnosed with diseases **4 years later** than men with the same disease

Women are represented in **<20%** of clinical trials

50% of women don't get the correct heart failure treatment

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$$A + B + C + D + E + F = \text{Disease}$$

(Factors in the body)

A + B + C + D + E + F = Lack of Disease

(Factors in the body)

Different factors can mean different outcomes

$$1 + 2 + 3 = 6$$

$$7 + 3 = 10$$

Different factors can also mean same outcomes.

$$1 + 2 + 3 + 4 = 10$$

$$7 + 3 = 10$$

Different factors can also mean same outcomes.
But the root causes of the outcome are not the same.

$$1 + 2 + 3 + 4 = 10$$

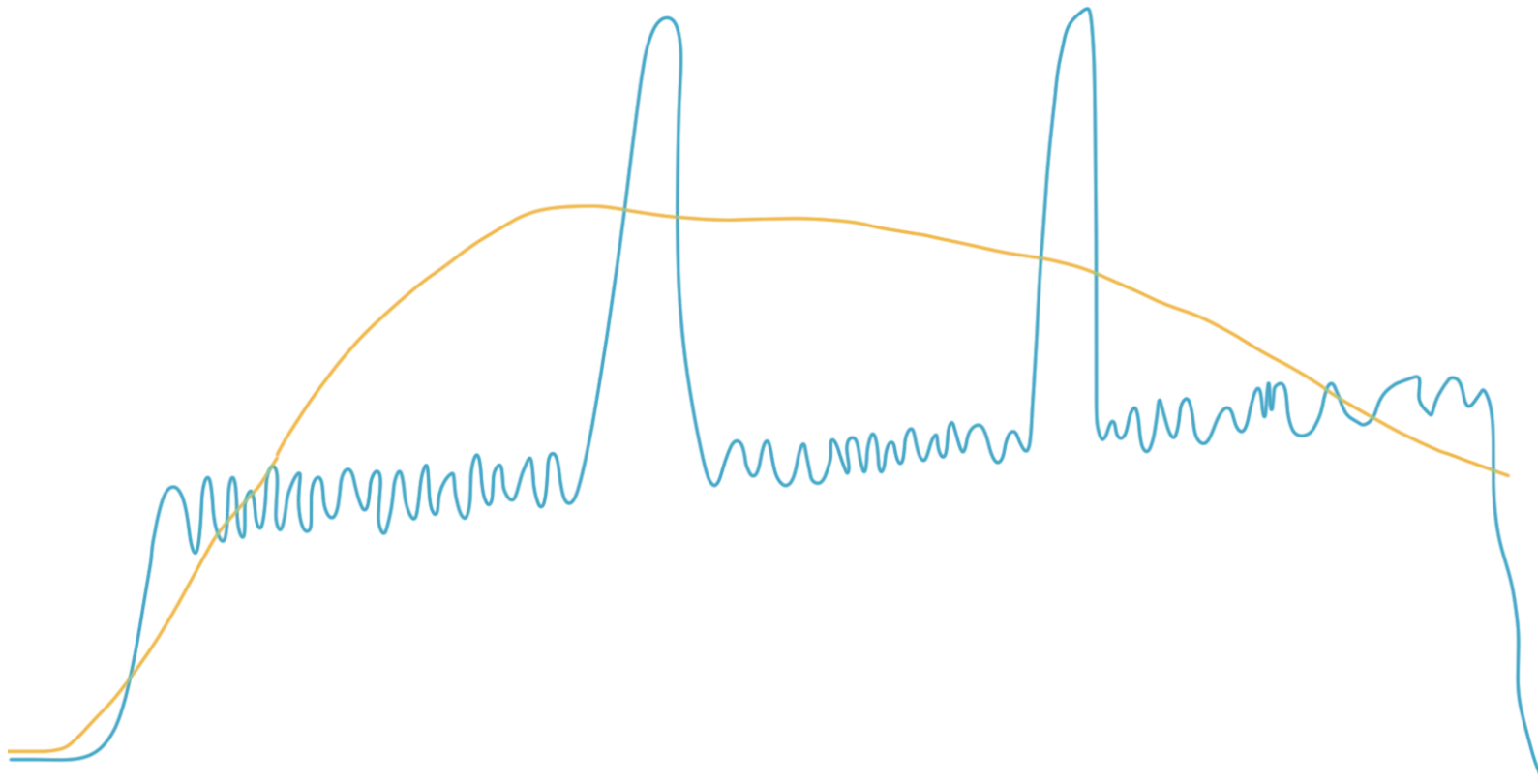
$$7 + 3 = 10$$

A + B + C + D + E + F
Z + Y + X + W + V + U

Women and men have different factors.

Average Hormonal fluctuations over a lifetime.

■ women
■ men



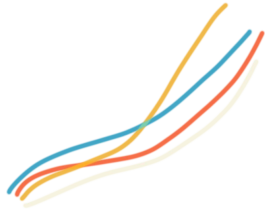
-1-
Puberty

-2-
Menstruation

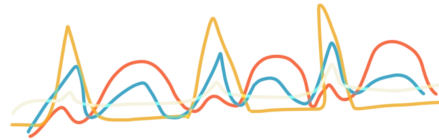
-3-
Pregnancy

-4-
Menopause

-1-
Puberty



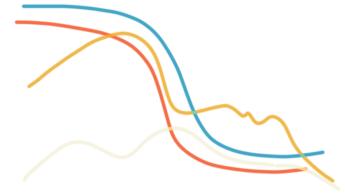
-2-
Menstruation



-3-
Pregnancy



-4-
Menopause

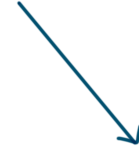
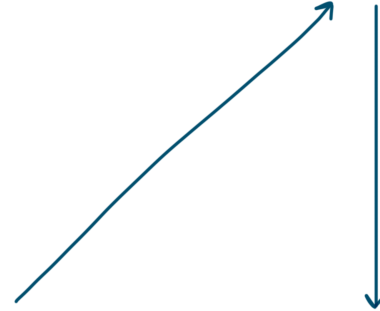
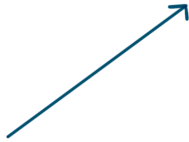


-1-
Puberty

-2-
Menstruation

-3-
Pregnancy

-4-
Menopause

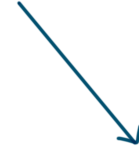
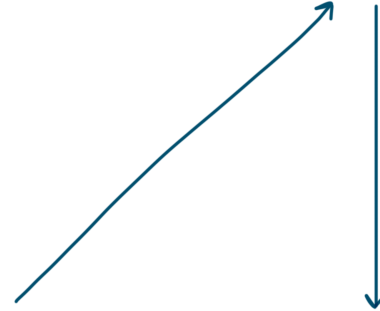


-1-
Puberty

-2-
Menstruation

-3-
Pregnancy

-4-
Menopause

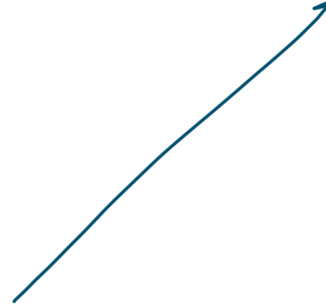


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Puberty

-2-
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-4-
Menopause

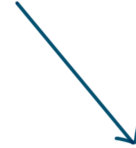


-1-
Puberty

-2-
Menstruation

-3-
Pregnancy

-4-
Menopause

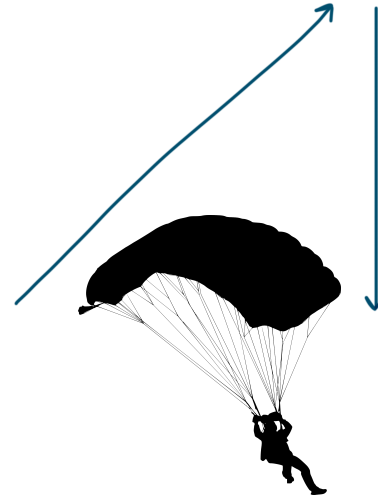


-1-
Puberty

-2-
Menstruation

-3-
Pregnancy

-4-
Menopause



Female bodies and male bodies are
different, but we should give them equal
opportunities + treatments.

What's stopping us?

We don't have a body of excellence.

-1-

We don't **know** enough.
4% of global health research is female-specific.

-2-

We don't **distribute** our current solutions.

What we don't know:

Hormones



Hormones



Hormones



Hormones

We don't understand their **correlations to diseases**.

We don't understand how to **identify their imbalance**.

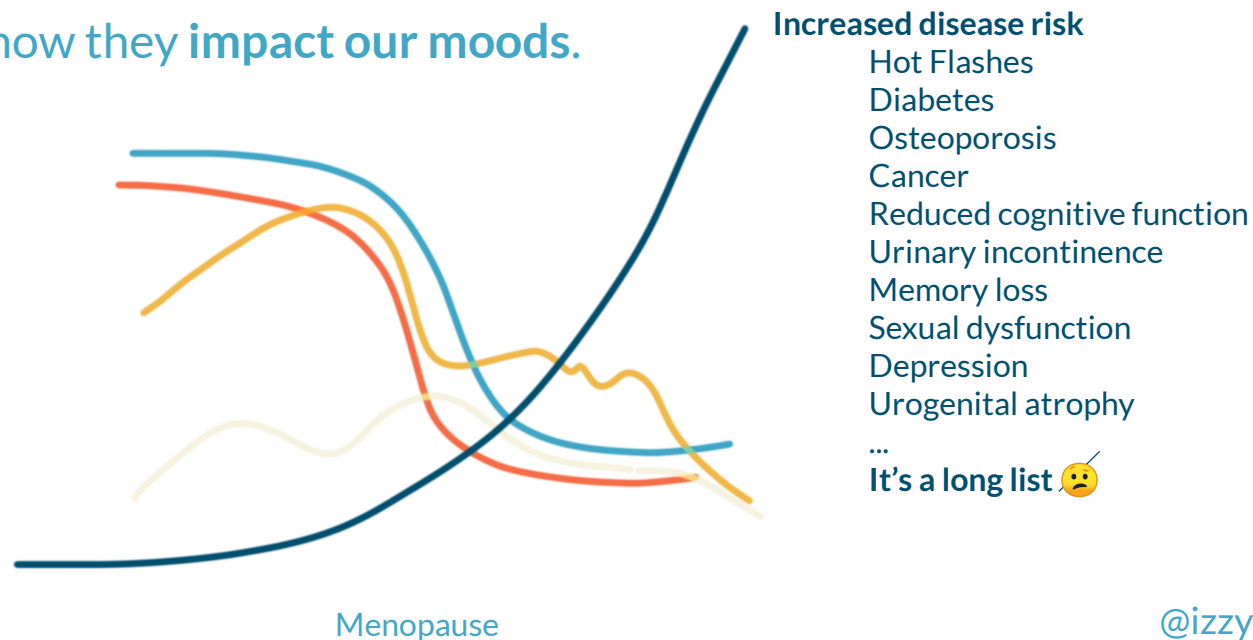
We don't understand how they **impact our moods**.

Hormones

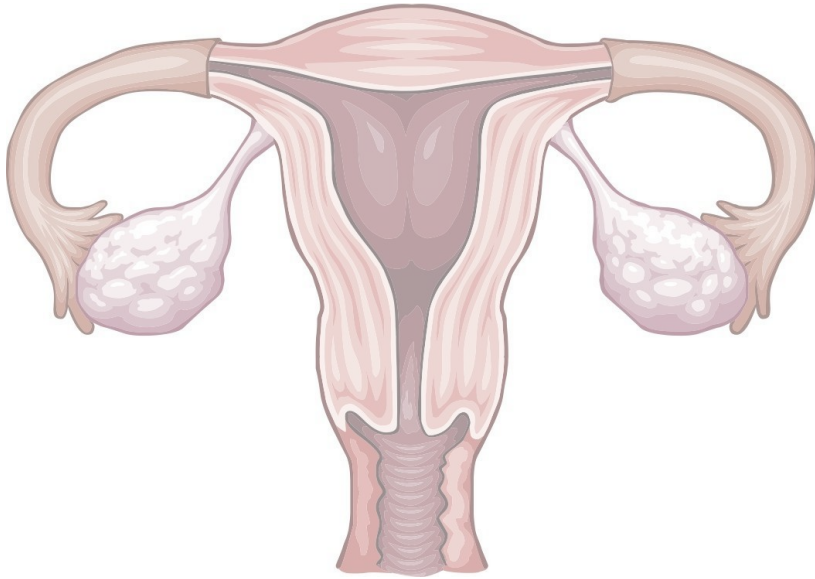
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Female-specific diseases



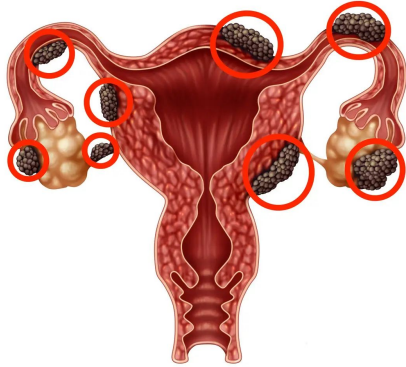
1

Diagnosing

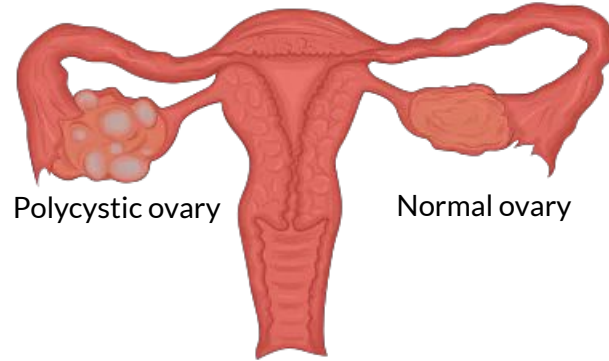
2

Treating

Female-specific diseases

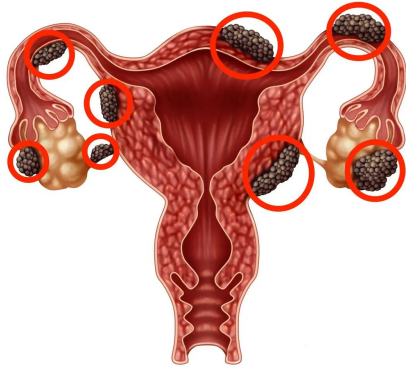


11% of women have
endometriosis

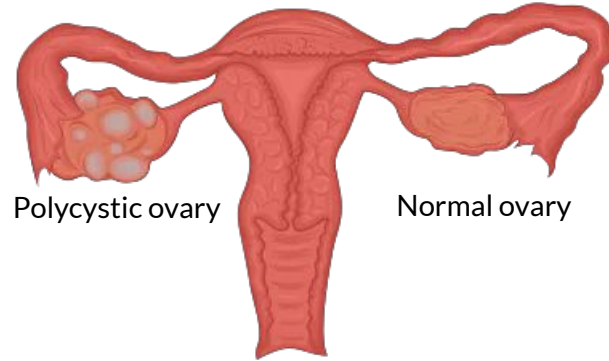


10% of women have **polycystic**
ovarian syndrome

Female-specific diseases



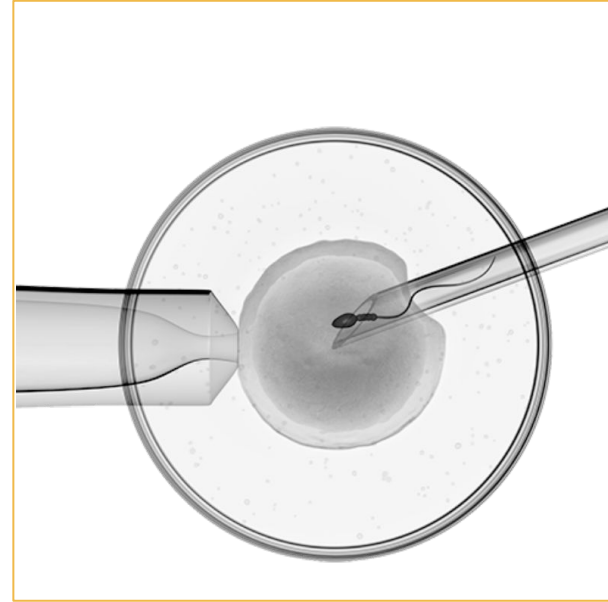
11% of women have
endometriosis



10% of women have **polycystic**
ovarian syndrome

And we have no cures.

The science of [contra/con]ception



That's only 3 examples.

What we don't distribute:

Period Poverty

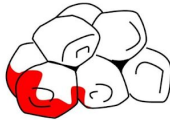
500 M

@izzygrandic

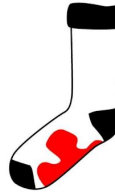
Period Poverty



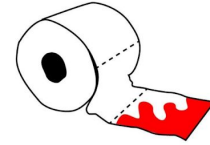
Newspaper



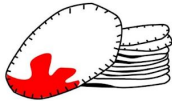
Cotton wool



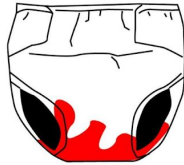
Sock



Toilet roll



Make up pads



Torn up nappies



Old rag



Plastic bag

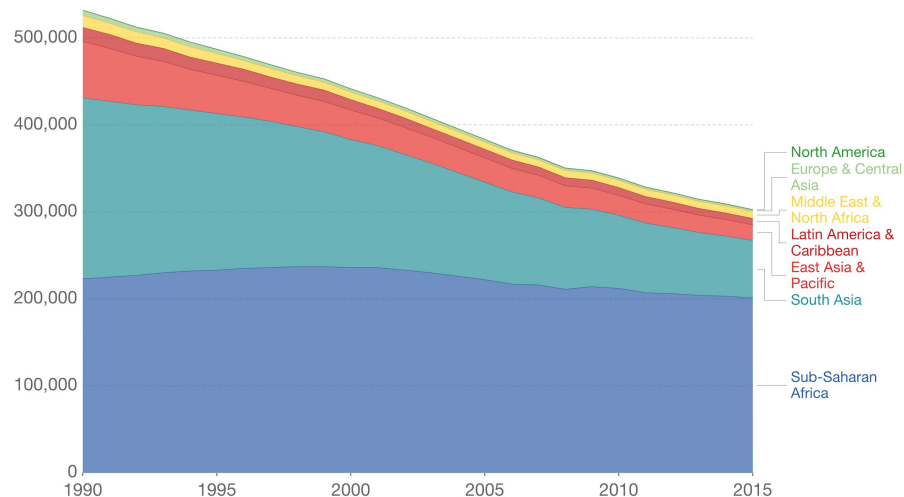
Maternal Mortality

300 M

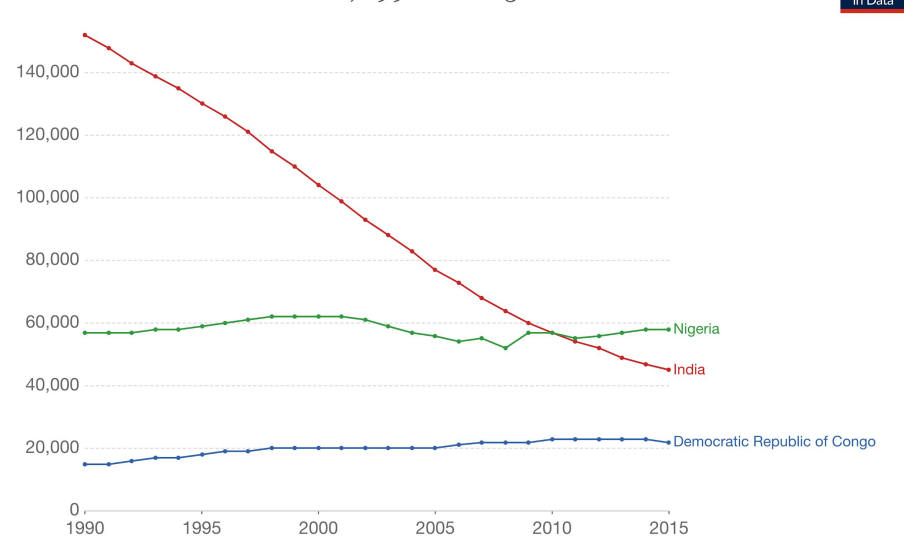
Maternal Mortality

Number of maternal deaths by region, 1990 to 2015

A maternal death refers to the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.



Number of maternal deaths, 1990 to 2015



-1-

We don't **know** enough.

-2-

We don't **distribute** what we know.

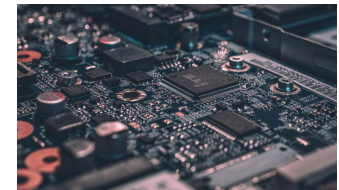
Tech Can Help



@izzygrandic

1. SMART DEVICES
2. NANOTECHNOLOGY
3. ARTIFICIAL INTELLIGENCE

WE HAVE THE TOOLS TO KNOW MORE.







Data Understanding



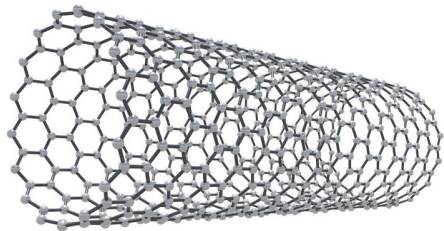
Service



Data Understanding



Service



Data Understanding



Service

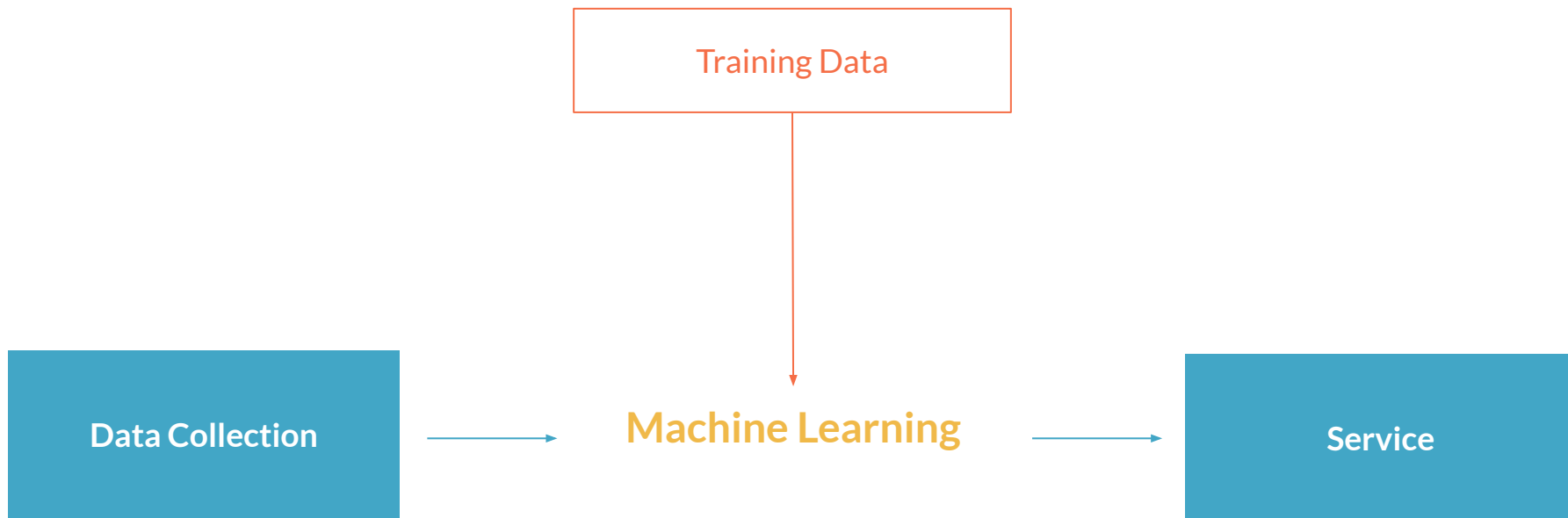
Data Collection



Machine Learning



Service



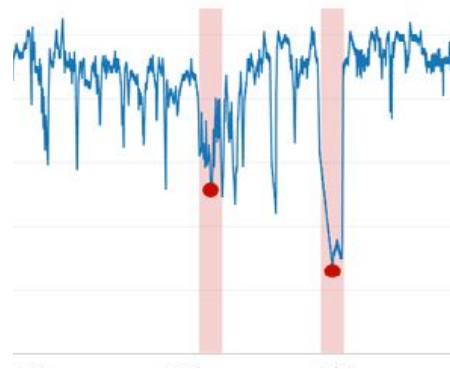
Data Collection



Data Understanding



Anomaly Detection

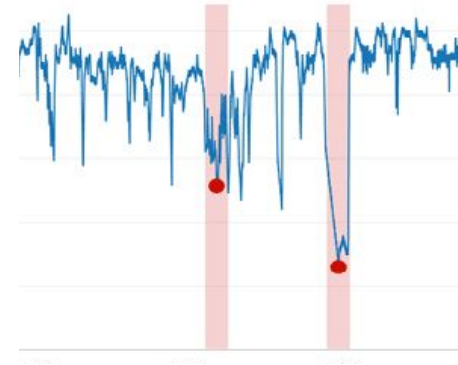


Anomaly Detection

Data Collection



Data Understanding



Women are diagnosed 4 years later for most diseases; 2.5 years later for cancer; 4.5 years later for metabolomic diseases

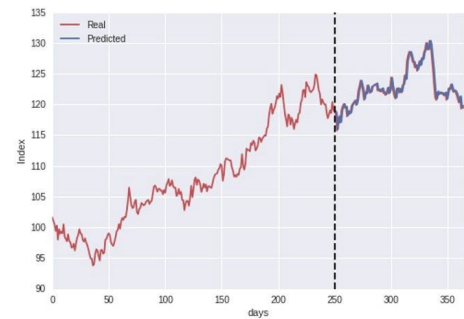
Data Collection



Data Understanding



Forecasting



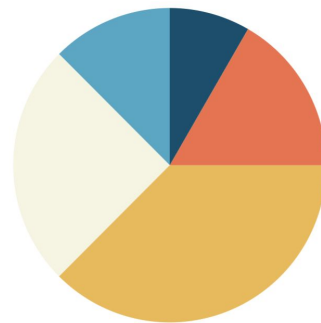
Data Collection

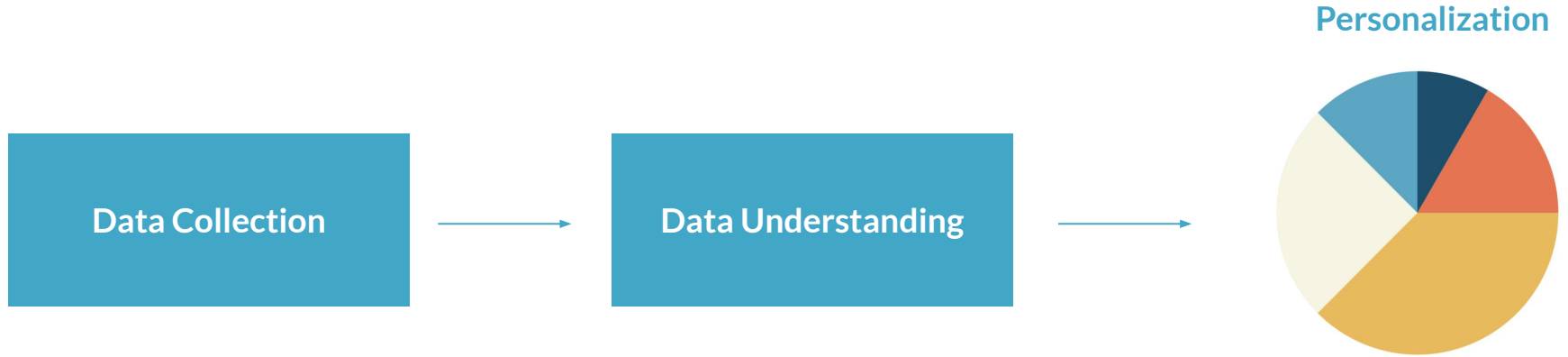


Data Understanding



Personalization

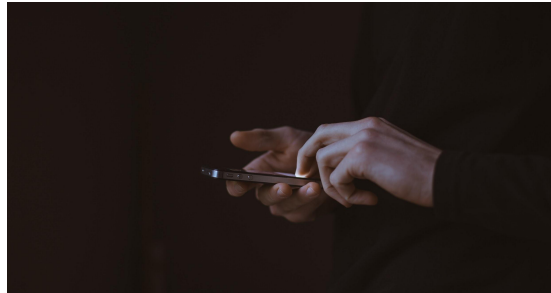
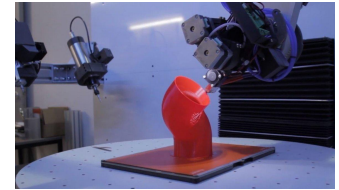




Most women experience birth control side effects because contraceptive methods aren't personalized.

1. MOBILE TECHNOLOGY
2. 3D PRINTING

WE HAVE THE TOOLS TO DISTRIBUTE
CHEAP PRODUCTS AND KNOWLEDGE.



CHEAPER PRODUCTS

SCALABLE INFO

1.

Testing Inclusivity

2.

Novel Sex Specific Treatments

3.

Digital Standards

4.

Involving Female Opinions

Testing Inclusivity

Diverse Clinical Trials.

Women are represented in <20% of clinical trials.

Novel Sex-specific Treatments



Novel Sex-specific Treatments



Novel Sex-specific Treatments

Female athletes are **2X** more likely to damage their ACL

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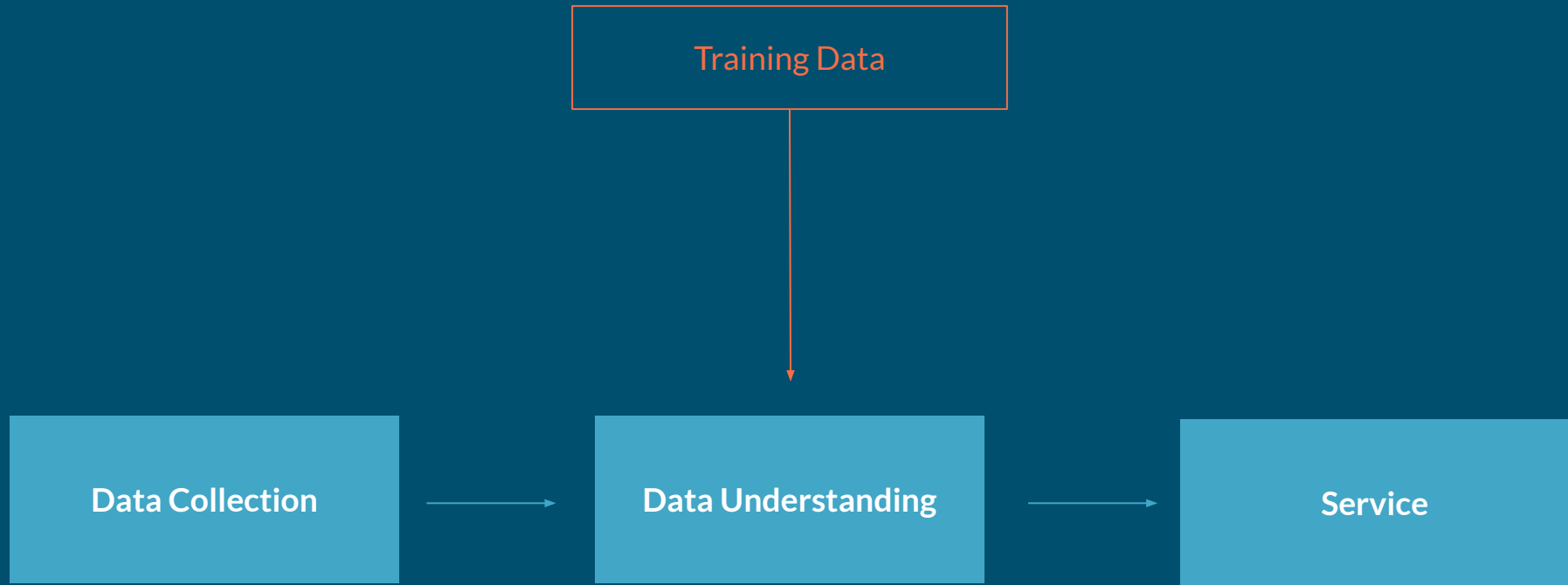
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Novel Sex-specific Treatments

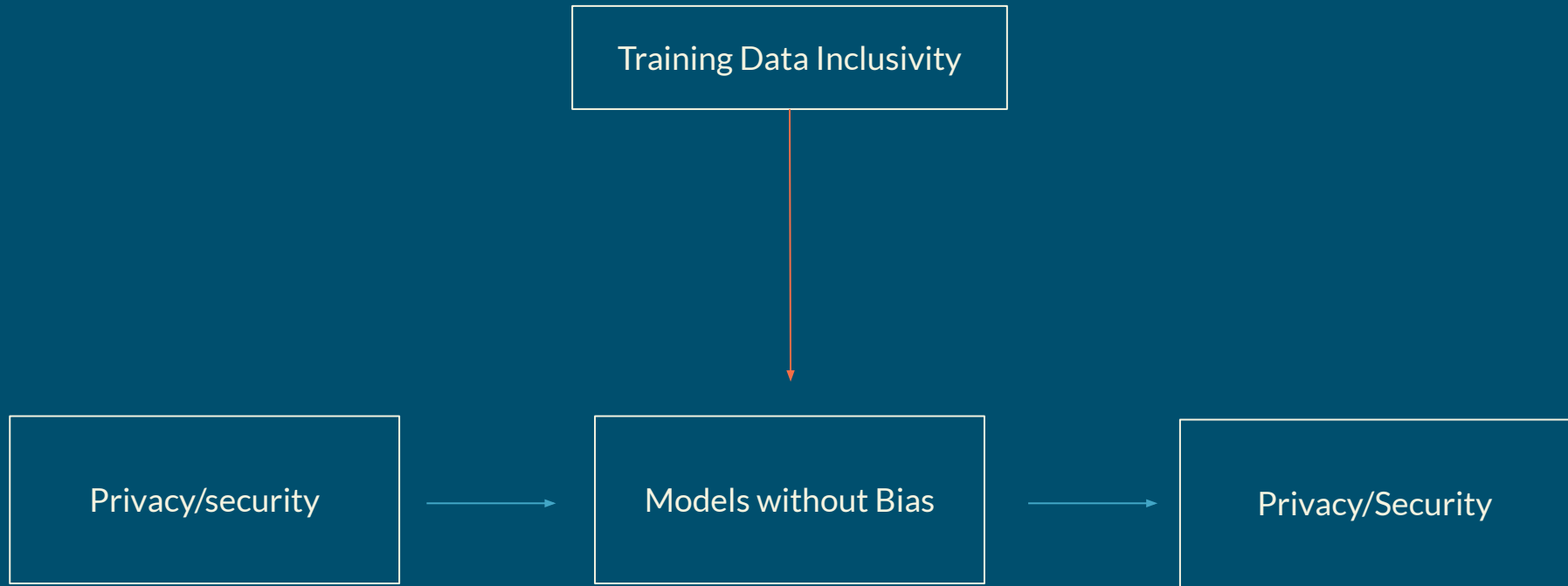
A + B + C + D + E + F
Z + Y + X + W + V + U

Women and men have different factors.

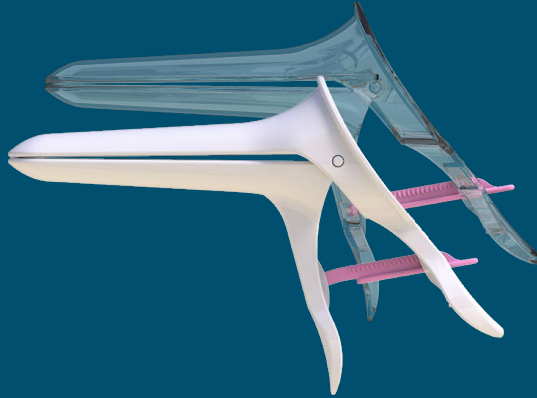
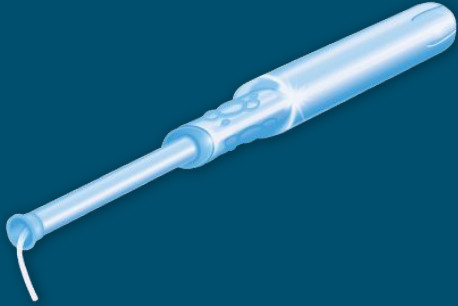
Digital Standards



Digital Standards



Involving Female Opinions



Involving Female Opinions

Reviewing Standards

Setting Standards

Involving Female Opinions



Involving **Diverse** Opinions



TKS



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