



# Problem Solving: Women vs. Men

Underground Construction Technology

Donna Renner, P.E. | July 13, 2021



# UNDERGROUND CONSTRUCTION TECHNOLOGY

The Underground Utilities Event | July 13-15, 2021 | Music City Center | Nashville, TN

## Me





# Agenda

- Disclaimer
- The Brain
- Decision Making
- How it Works



## Disclaimer



Based on science, research  
and observation



Not all brains are alike



Everyone thinks differently  
and that difference is useful

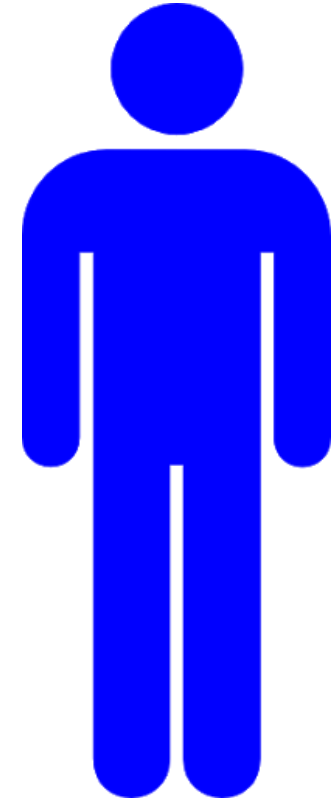




## Brains

### Male:

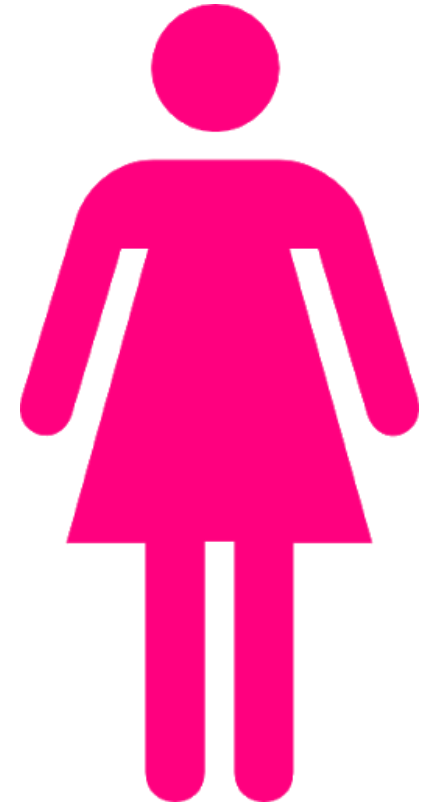
- Slightly larger brain mass than women
- Typically rely more heavily on the left side of their brain to solve problems.
- The left side of the brain is responsible for tasks that have to do with logic





## Brains Female:

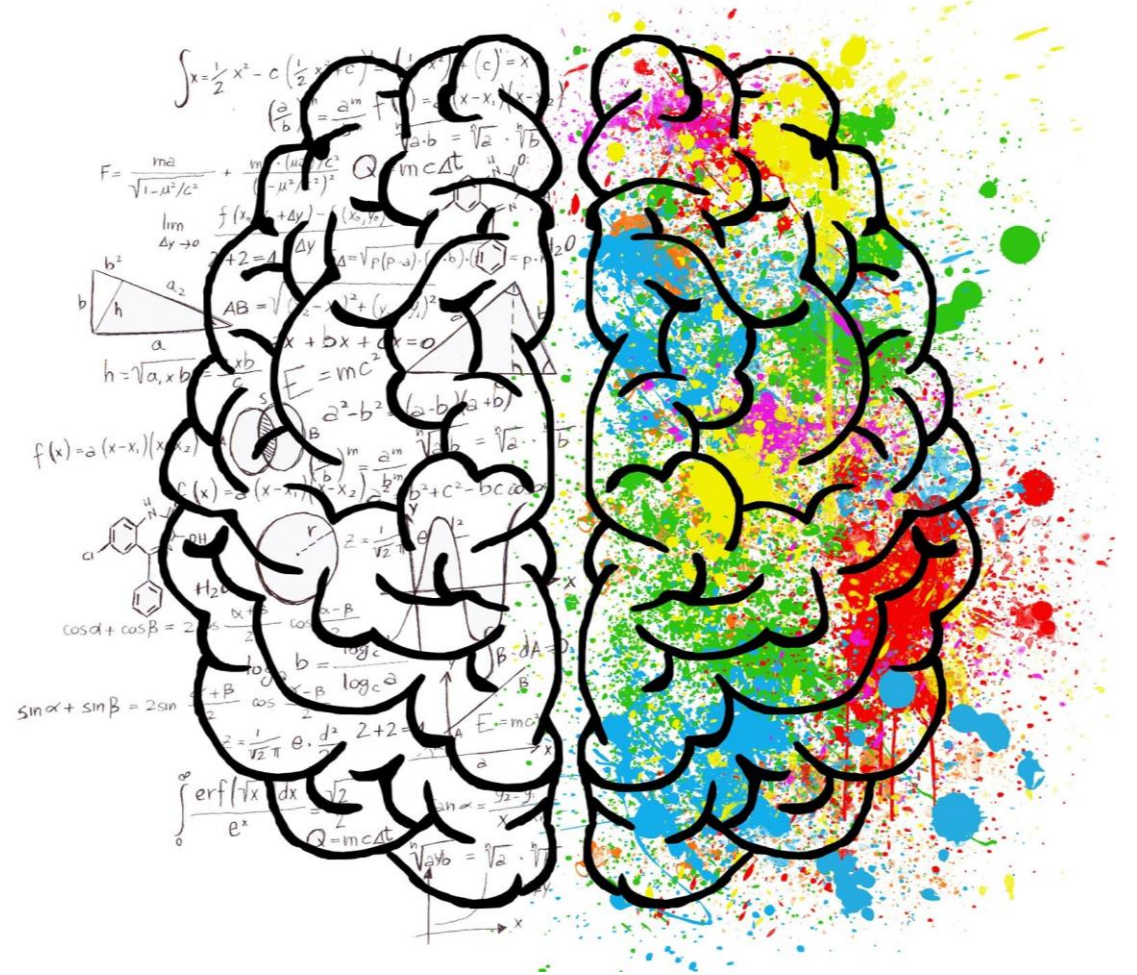
- Brain is slightly smaller in mass
- Neurons are packed more tightly allowing for quicker decision making and multi-tasking
- The part of the brain that is responsible for problem-solving and decision-making, called the frontal lobe, is actually larger
- Can tap more readily into the right side of the brain, which is responsible for the creative thinking process





## Brains

- It's not that one gender's brain is better than the other, it's that together they can achieve the best results





## Brains Listening

**The biggest communication  
problem is we do not listen to  
understand.**

**We listen to reply.**





## Brains Empathy:

- Almost all humans, both male and female, have the basic ability to cultivate empathy

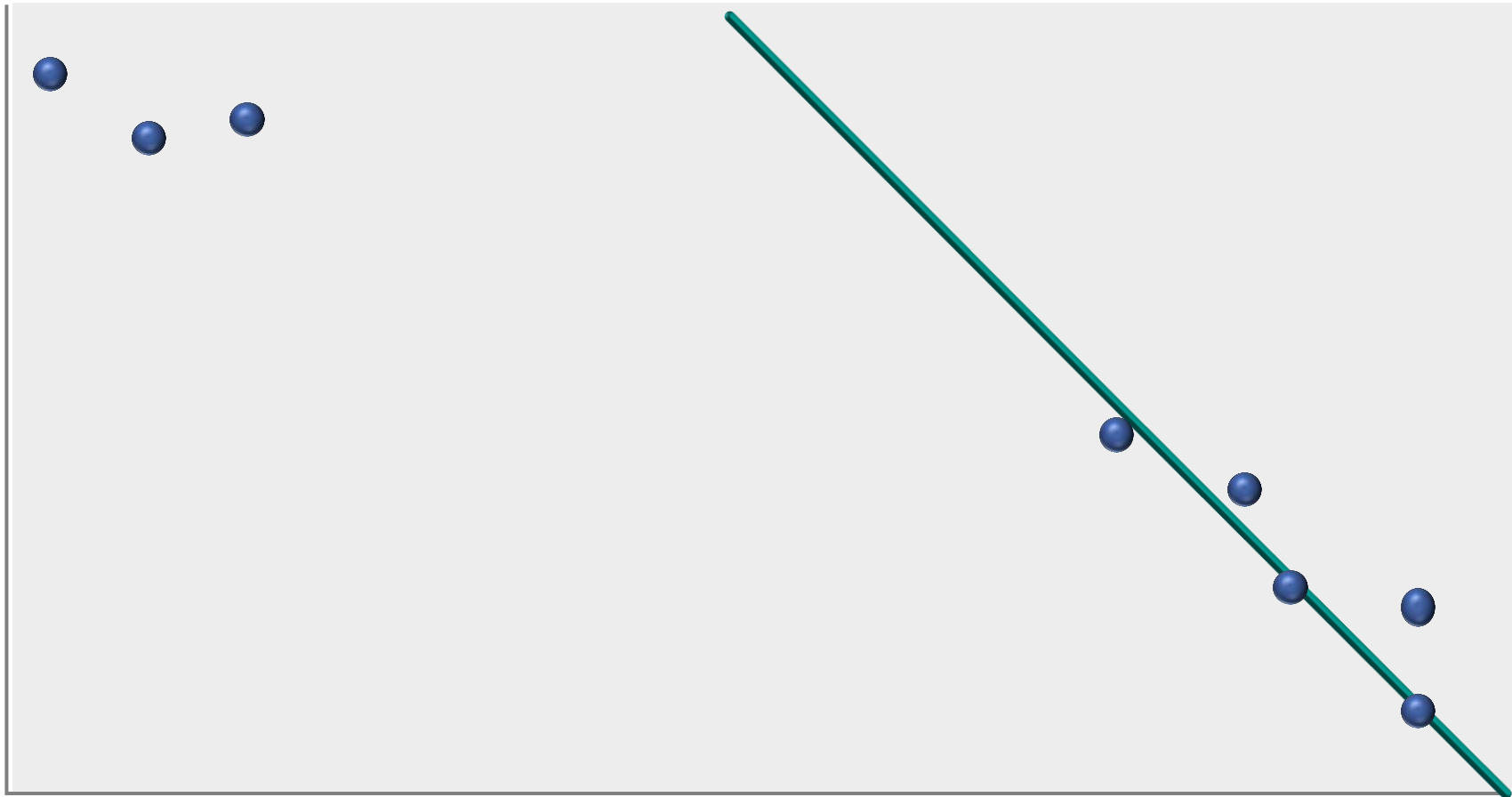




## Brains Male



Empathetic/  
Creative  
Thinking



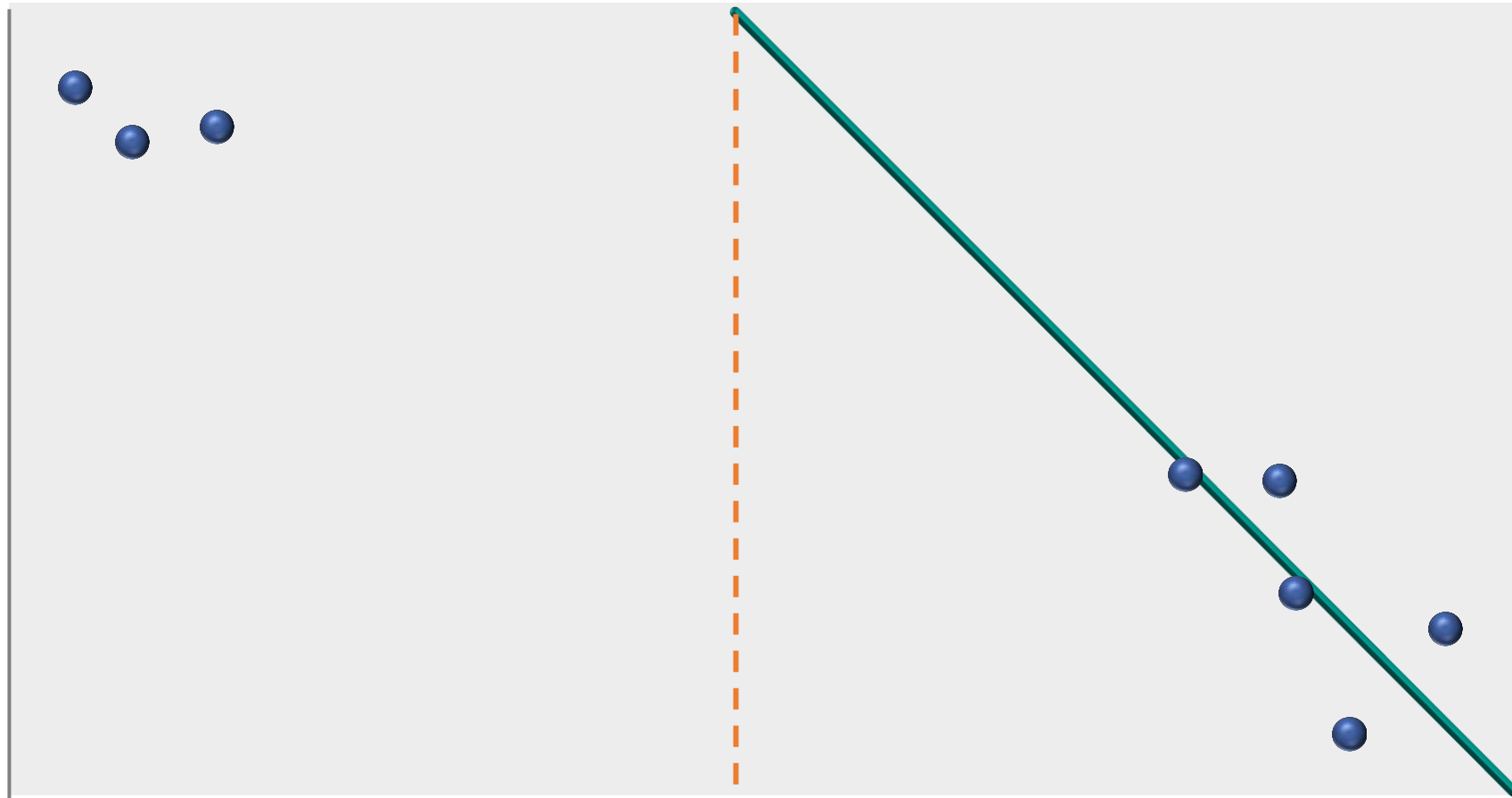
Logical/Systemic



## Brains Female



Logical/  
Systemic



Empathetic/Creative  
Thinking



## Brains

Brains do not have only “male” or “female” characteristics



### Women’s brains

Stronger cross-hemispheric connections - better multitaskers and holistic thinkers

More active “empathy” regions - Ability to understand and share the feelings of others

### Men’s brains

Lateralized - laser-focused thinkers

Barely pay attention – emotionally clueless

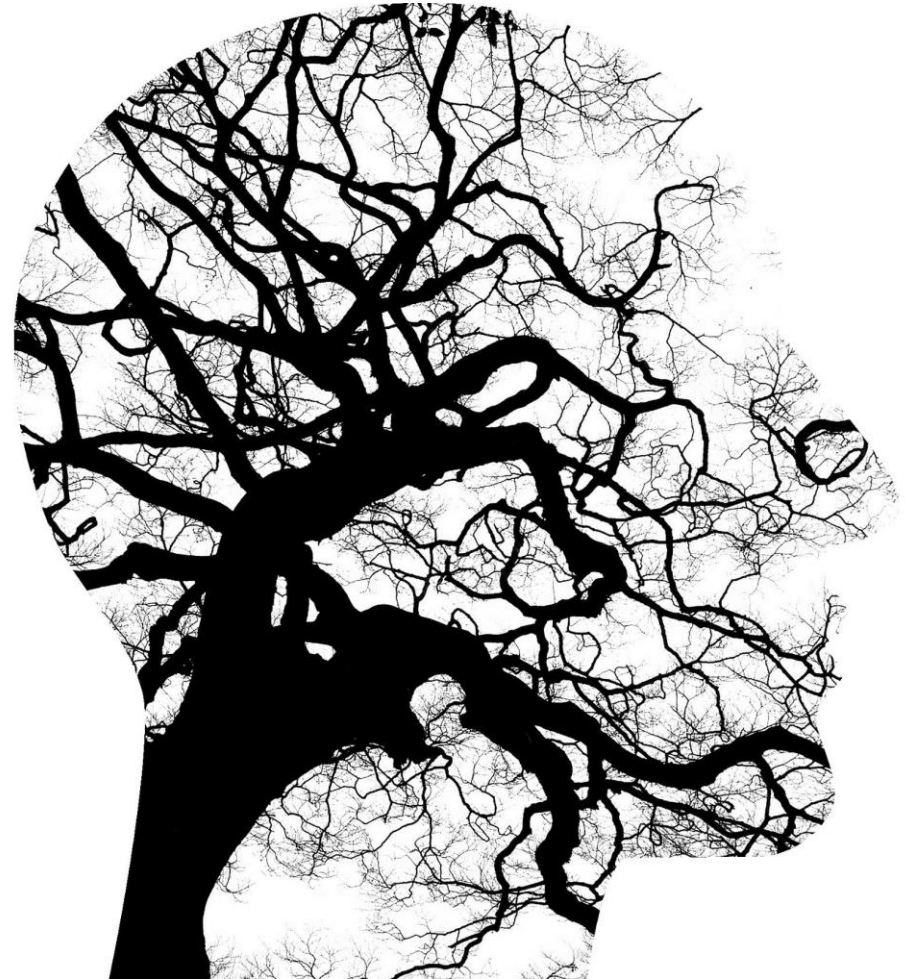




## Brains

### Brains belong to people

- Who have lived for decades in societies that treat men and women differently
- Who have different experiences and opportunities
- All of our experiences are different
- Experiences change the structure and function of the brain





## Brains Stress

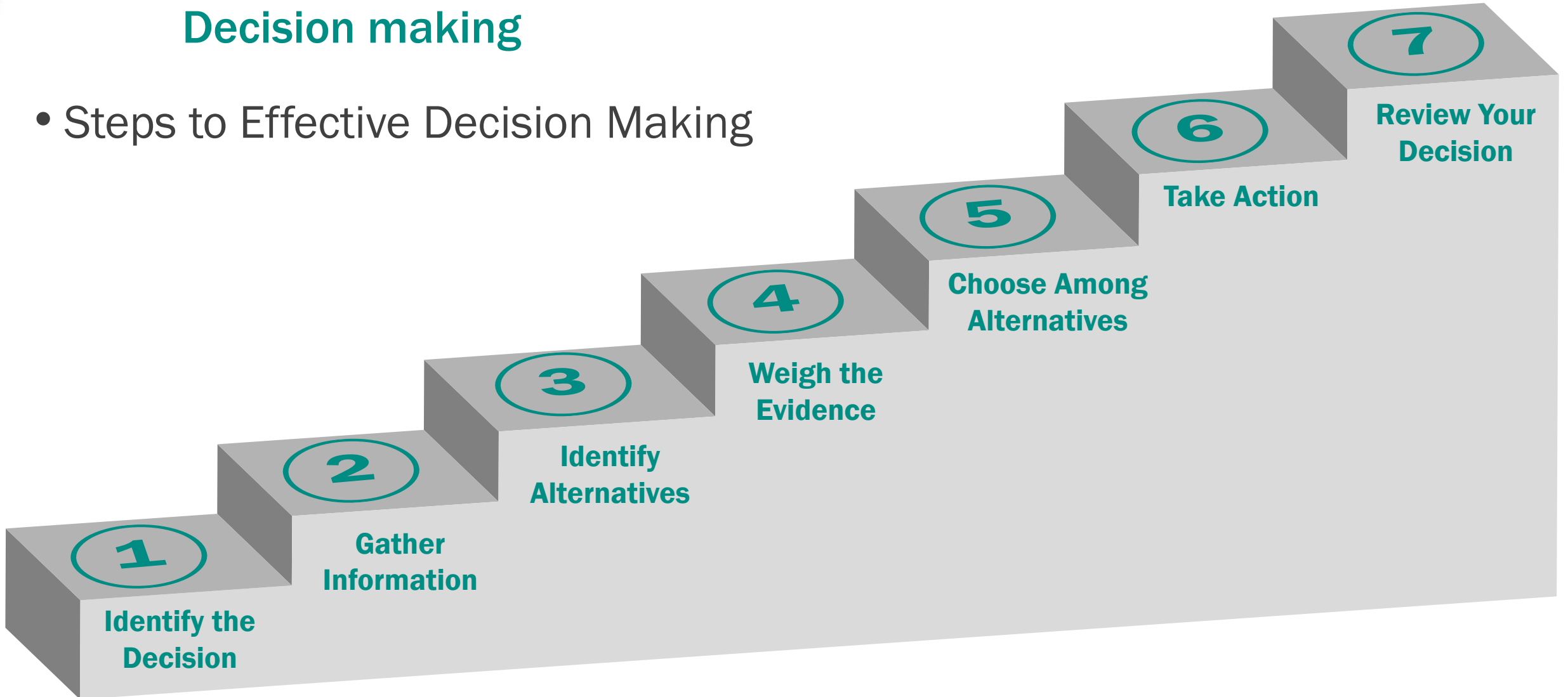
Men	Women
Eager to take risk	Bodies react
Laser focus on rewards	Take time weighing consequences
Heart rates and cortisol levels run high	Interested in smaller rewards they can count on
Take more and bigger gambles	Become risk alert

- We need both men and women at the top level when high-stakes decisions are being made
- Genders balance one another out when tensions are running high



## Brains Decision making

- Steps to Effective Decision Making





## The Decision

### Loss of power / Donna was cold

- Most of us had issues and decisions to make – house getting cold, no good information, facts weren't supporting rolling blackouts

Men – lets go somewhere where it is warm



Women –

- What if power comes back on, how will we know
- Let's give it some time and see what happens
- What do we need to do around the house to protect
- What about pipes
- If we stay with gas fireplace on will it protect the pipes
- What about dog – dog gets stressed – no yard
- What about roads – are they safe
- Is there a reliable place





## Brains DWU Collection Division

- Factors
  - Budgets
  - Environmental regulations
  - Maintenance
  - Political consideration – citizen interest, city manager and council
- Collaboration
  - Team includes male and female with ethnic diversity
  - Teams set that way to get the best results



## Decisions Decisions thru collaboration

- Which projects are more detrimental
  - Overflows
  - Continued maintenance
  - Technologies
  - Other departments
  - Future maintenance cost
  - Reuse
  - Organizational goals
  - Bond ratings





## Decisions Overflows

- Throttle flows to plant
- Overflow into peak flow basins

### Equipment maintenance

- Cost to repair
- Cost to replace
- Cost savings for reuse
- Operations and maintenance cost
  - Existing equipment
  - New equipment





## The Decision

### Pipeline break

- Emergency repair in an urban area

**Men** – get a backhoe loaded and grab some pipe

**Women** –

- Get a map with pipeline and appurtenances
- Sizes, material, exact location
- Respond to protect people, property and the environment
- Mitigate environmental issues
- Notify anyone affected
- Service disruption
- Is there a need for road closures
- Can it be fixed with in-house forces



## Brains Decision making

- We all think differently
- Consider the Steps to Effective Decision Making
- Listen to Understand
- Have Empathy





## **Q & A session**

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## acknowledgements

- Kathy Winterhalter Tags – Insight Assessment (2020)
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