



Welcome to Communication Sciences and Disorders – NYU Swallowing Research Lab

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Agenda

Our Stories

Swallowing Disorders & “Dysphagia”

Our Research

Experiential Learning

Discussion / Q & A

Workshop Description

Students will have the opportunity to:

- learn about **swallowing disorders** and *dysphagia*
- learn about **different methods** that speech-language pathologists (SLPs) and researchers use to evaluate swallowing
- observe **live demonstrations** of clinical bedside and flexible endoscopic evaluations of swallowing
- **test** (and **taste**) various food and liquid textures frequently used to manage swallowing disorders

Meet the Lab!



Brynn's Story

“fell” into the field - professional interests didn't develop until medical externship



Education

- Undergraduate: University of Arkansas
- Graduate: University of Arkansas & New York University
- Challenges: late diagnosis of ADHD / specific learning impairment for math during doctoral studies at NYU

Credentials

- Certificate of Clinical Competence in Speech Language Pathology (CCC-SLP)
- Board Certified Specialist in Swallowing and Swallowing Disorders (BCS-S)
- Certified Brain Injury Specialist (CBIS)

Current Roles

- Clinical: Speech Language Pathologist (Mount Sinai West Hospital)
- Research: doctoral student / research assistant (NYU / Langone)
- Home: dog mom to Olive

D'manda's Story

At first, I was just looking for an easy way to make money without doing too much work.



Education

- Undergraduate: Misericordia University
- Graduate: Misericordia University
- Challenges: fear of boredom

Credentials

- Certificate of Clinical Competence in Speech Language Pathology (CCC-SLP)

Current Roles

- Clinical: Speech Language Pathologist (Jersey City Medical Center)
- Research: doctoral student / research assistant (NYU / Langone)
- Home: aunt to a bossy almost 2-year old

Why is food important to us?

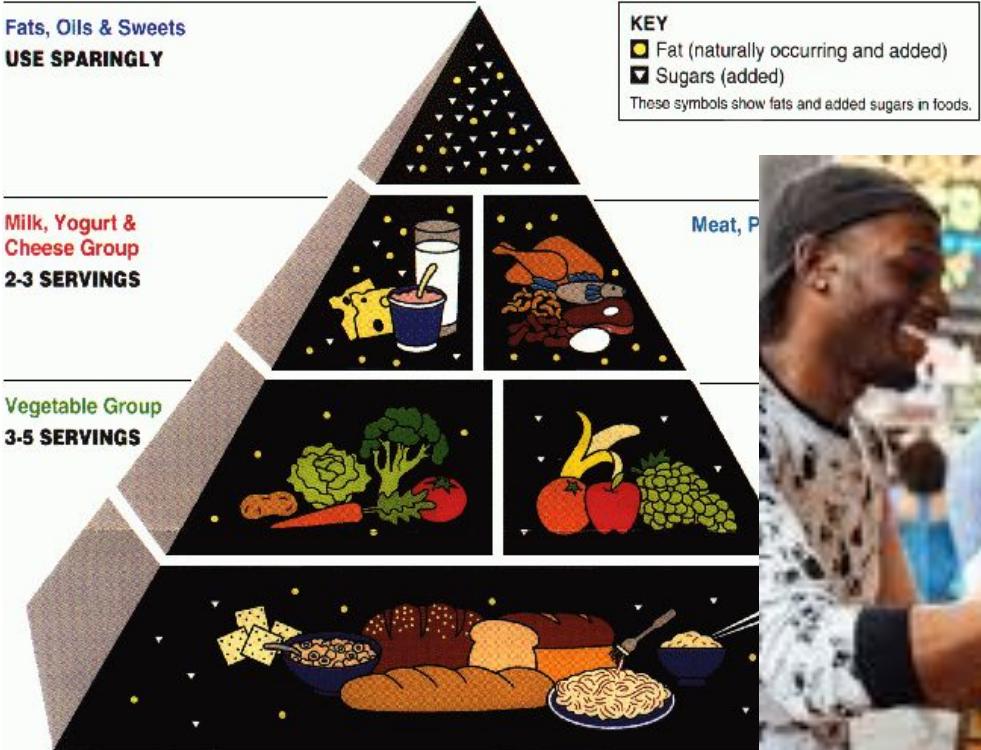


Photo credits: (1) https://en.wikipedia.org/wiki/Food_pyramid_%28nutrition%29; (2) <https://sportsandsocial.com/>; (3) <https://chocolatechocolateandmore.com/chocolate-peppermint-cobbler/>

How do our bodies accomplish eating and drinking?



through a process called ***swallowing***

How do you swallow?

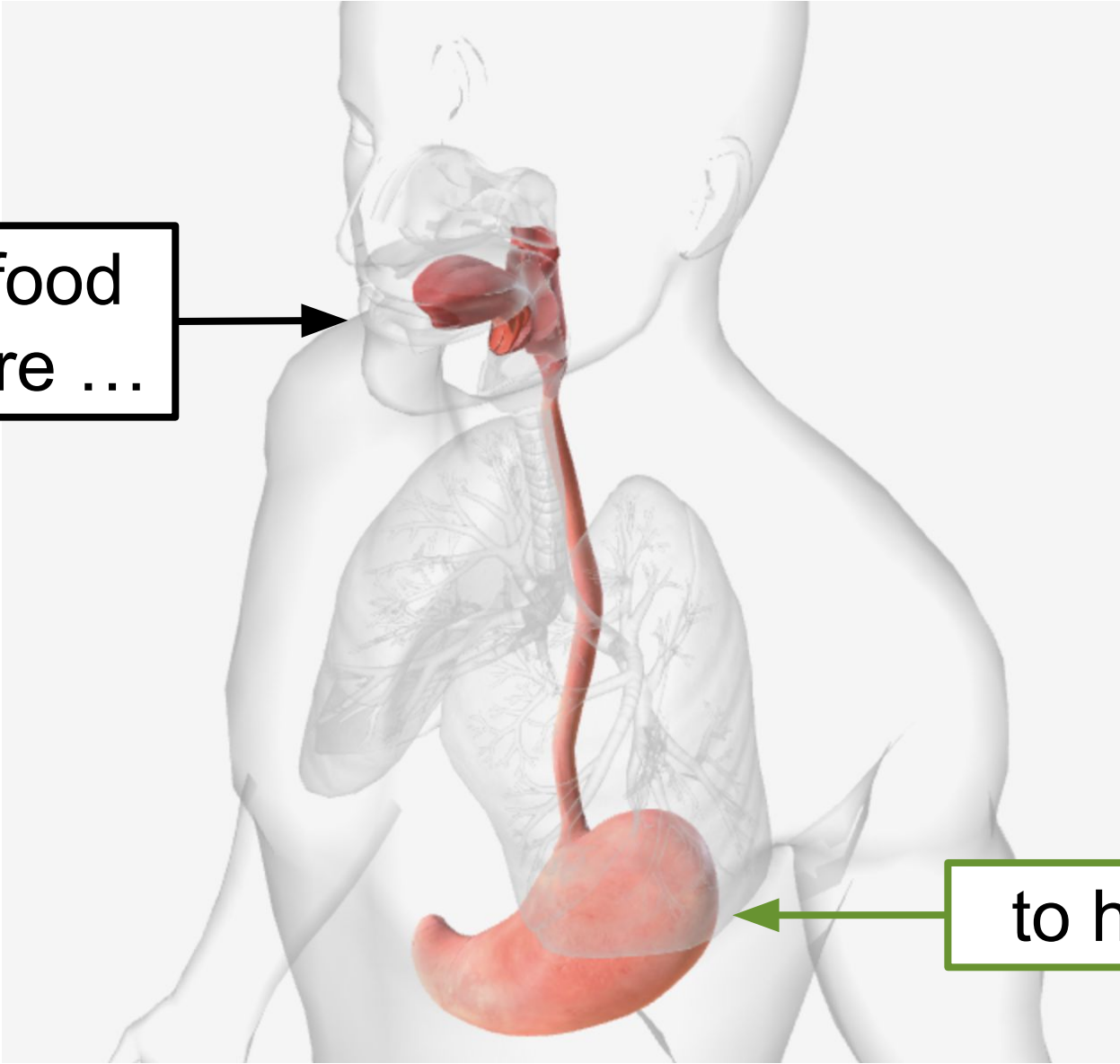
(brief exercise)

- 1) Swallow your saliva - what do you *feel*?
- 2) Watch your neighbor swallow - what do you *see*?
- 3) Have you ever mis-swallowed? *how* do you know?

What is swallowing?

The Goal:

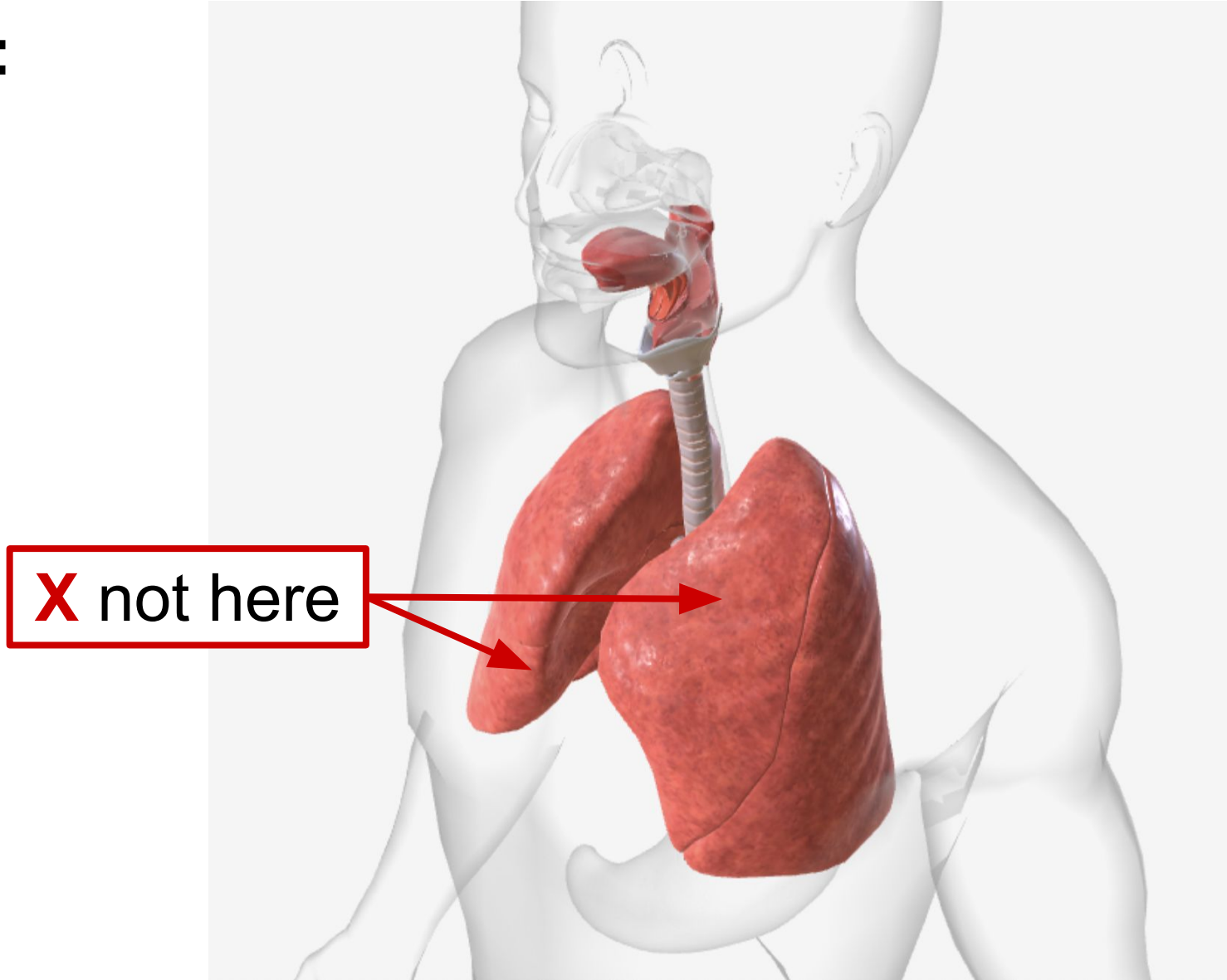
getting food
from here ...



to here ...

What is swallowing?

The Goal:



Healthy swallowing promotes *homeostasis*



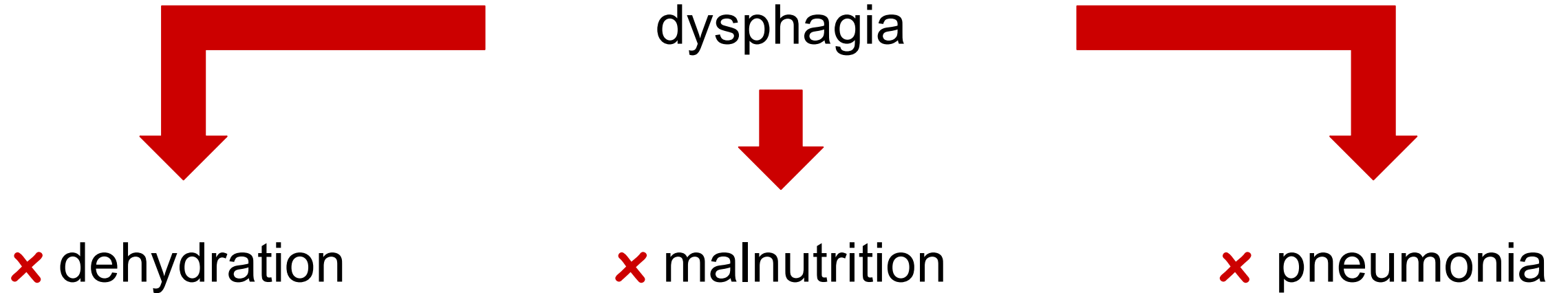
homeostasis: the body's ability to maintain internal **stability**
(even when external conditions change)

What is “dysphagia”?

difficulty swallowing

(anywhere from the mouth to the stomach)

Dysphagia can cause *dysbiosis*



dysbiosis: the body is unable to maintain internal stability
(poor health, poor ability to recover)

Homeostenosis

healthy swallowing



homeostasis



homeostenosis: reduced physiologic reserve
(often occurs as our bodies age)



dysphagia



dysbiosis

Our Lab's Research

Principal Investigator:

Sonja Molfenter, PhD, CCC-SLP



Research Focus:

- 1) Understanding the impact of age-related muscle change in the head and neck muscles on swallowing function.
- 2) Exploring methods to prevent or reverse these changes to improve long term health outcomes.

Current Clinical Trials: Pharyngeal Exercise Plus Protein (PEPP)

Brynn's Research

Research Focus:

- 1) Characterizing changes in swallowing associated with spinal disease and following spinal surgery.
- 2) Exploring methods to improve swallowing recovery after spine surgery to improve long term health outcomes.
- 3) Understanding current “standard of care” practices in our health systems to improve quality of care and patient safety.

Current Clinical Trials: Proactive Behavioral Health Intervention for Swallowing and Voice after Anterior Cervical Discectomy and Fusion (ACDF) Surgery

D'manda's Research

Research Focus:

- 1) Advancing evaluation and treatment methods for dysphagia (swallowing disorders).
- 2) Expanding access to care and promoting health equity in speech-language pathology.
- 3) Bridging research and clinical practice to improve patient outcomes.
- 4) Improving care for patients with medically complex conditions, including those with pulmonary issues.

Current Research Projects: Studying how speech-language pathologists currently treat swallowing disorders to understand trends and improve future care.

Challenges understanding & evaluating swallowing:

- motor and sensory impairments (**can't feel it**)
- internal process (**can't see it**)
- co-occurrence of cough impairments (**can't hear it**)

What types of diagnostic tests can we use to tell us more?

Videofluoroscopy

Normal Swallow



Abnormal Swallow

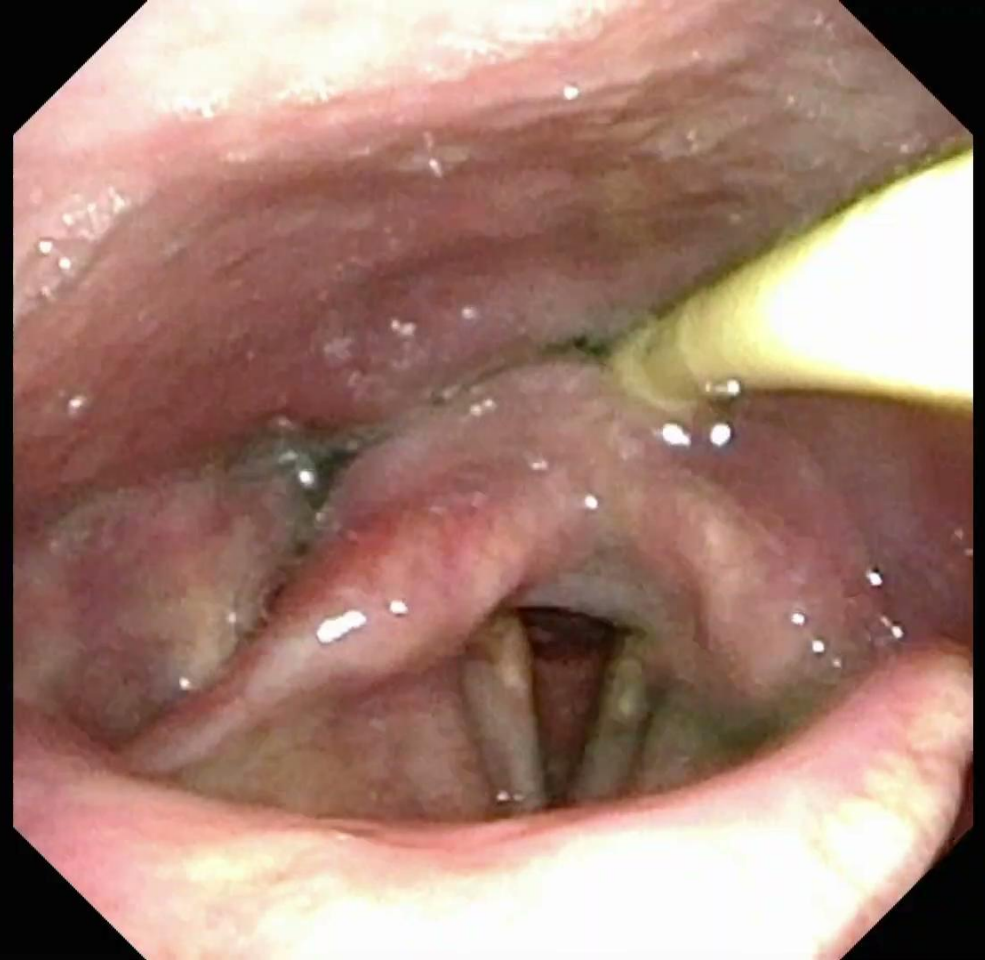


Flexible Endoscopy

Normal Swallow

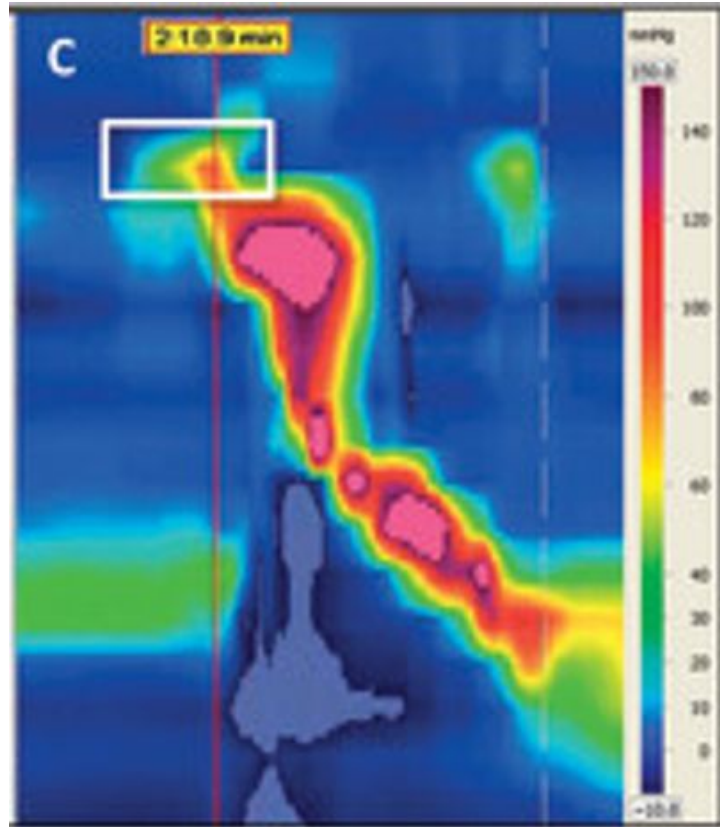


Abnormal Swallow

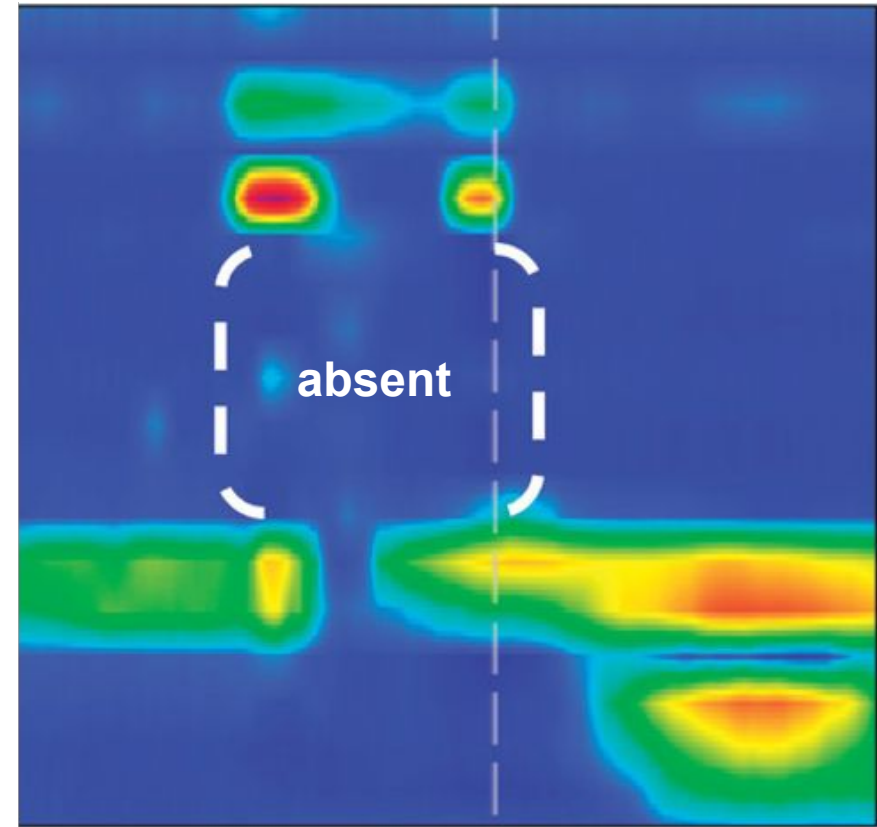
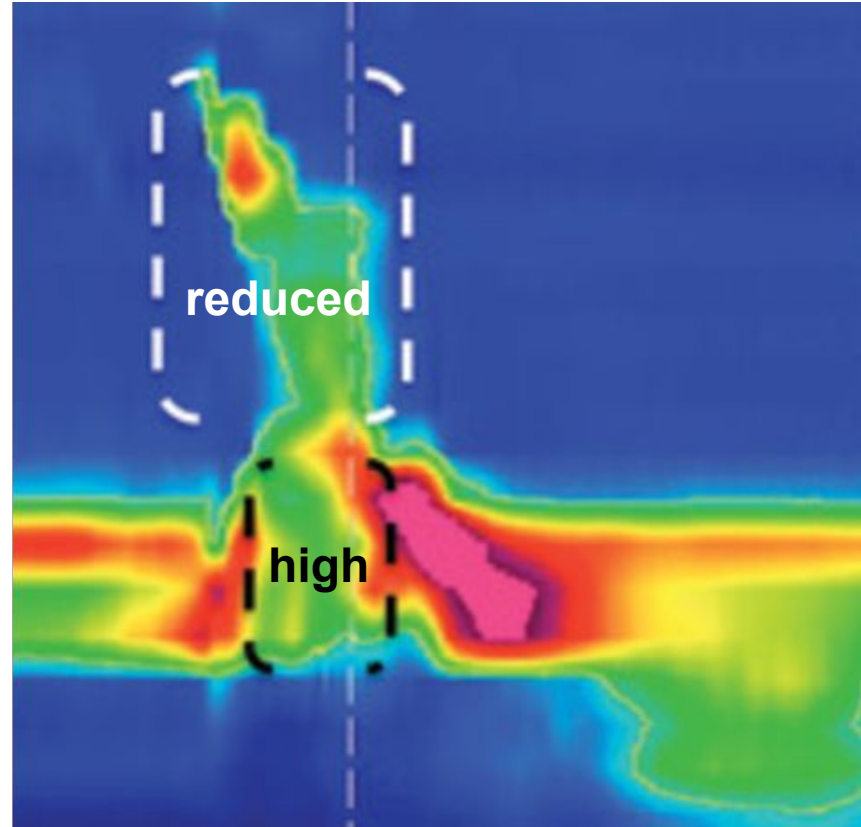


Manometry

Normal Swallow



Abnormal Swallows



Clinical Evaluation

Clinical challenges associated with dysphagia diagnostic imaging:

- 1) It is invasive
- 2) It is expensive
- 3) It isn't always accessible
- 4) It doesn't tell us the whole story

Clinical Evaluation integrates multiple sources of information, including history, patient report, and clinical observations to create an *individualized* care plan.

What can we do for someone with dysphagia?

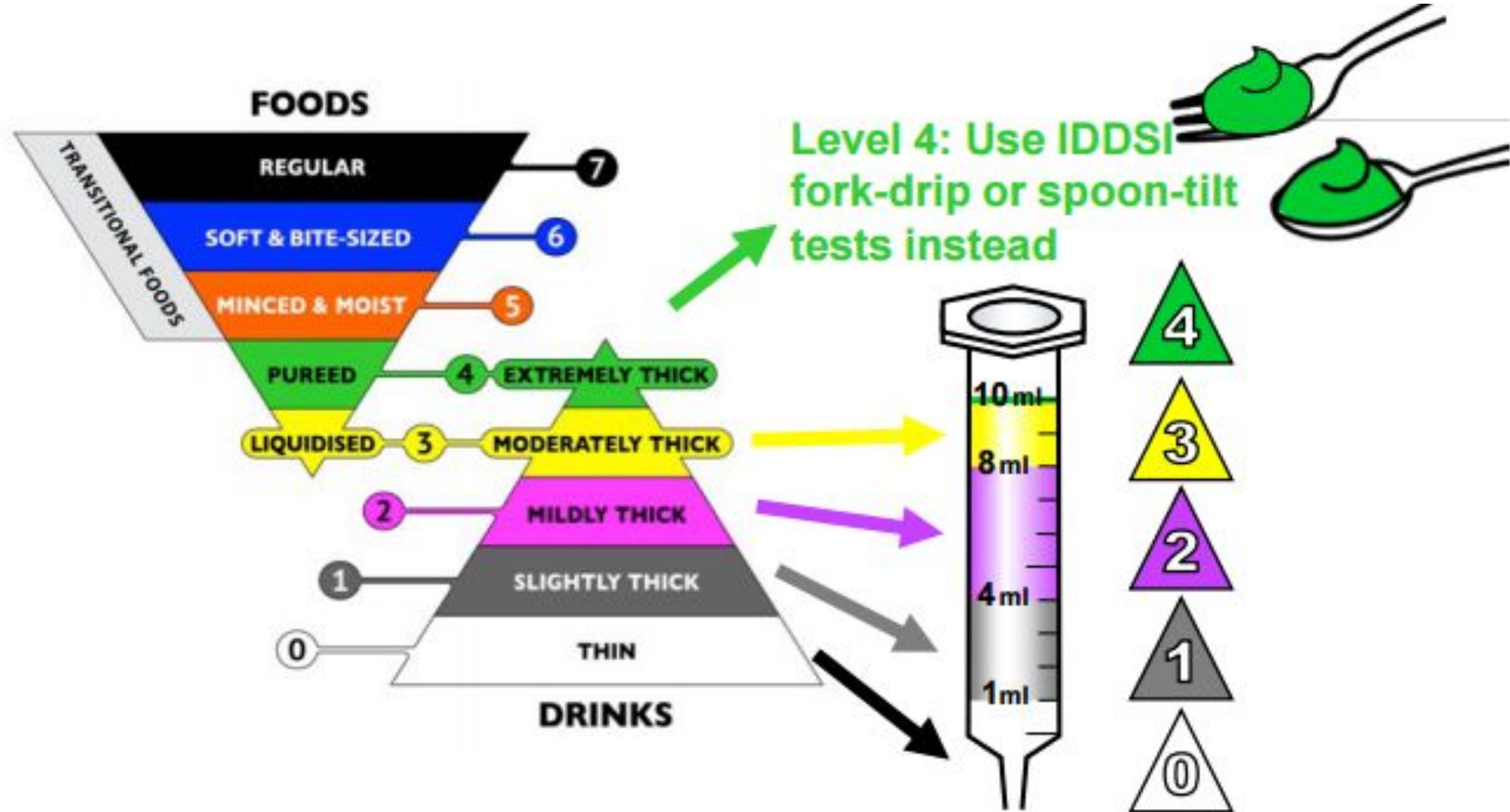
Treatment = creates lasting improvement

Compensation = “band-aid” approach

Management = reduces negative health impacts

Altering the texture or viscosity of food and liquid is one of the most common clinical strategies recommended to people with dysphagia.

International Dysphagia Diet Standardization (IDDSI)



<http://iddsi.org/framework/drink-testing-methods/>

<http://iddsi.org/framework/food-testing-methods/>

Rationale - blended or softer texture foods

Certain food textures may be overly difficult, or impossible, to breakdown and chew for someone with weakness or poor dentition.

Softer / blended textures require less effort to chew and breakdown:

- may improve efficiency and intake
- may prevent choking
- may reduce swallowing-related fatigue

Rationale - thickened liquids

Regular (thin) liquids move quickly and require faster and more precise timing to swallowing safely.

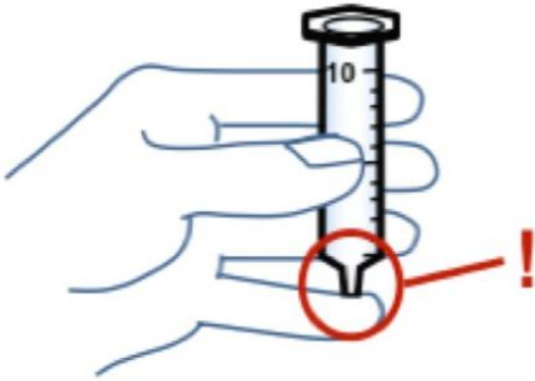
Thickened liquids move more slowly:

- allows more time to respond (swallow)
- requires less agility and control

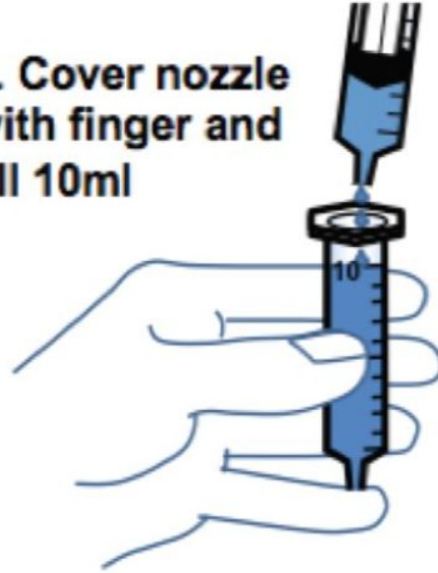


Testing Liquid Viscosity:

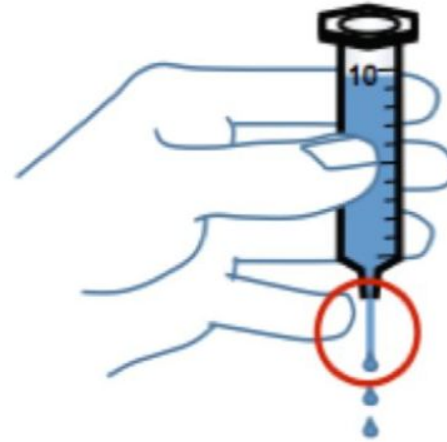
1. Remove plunger



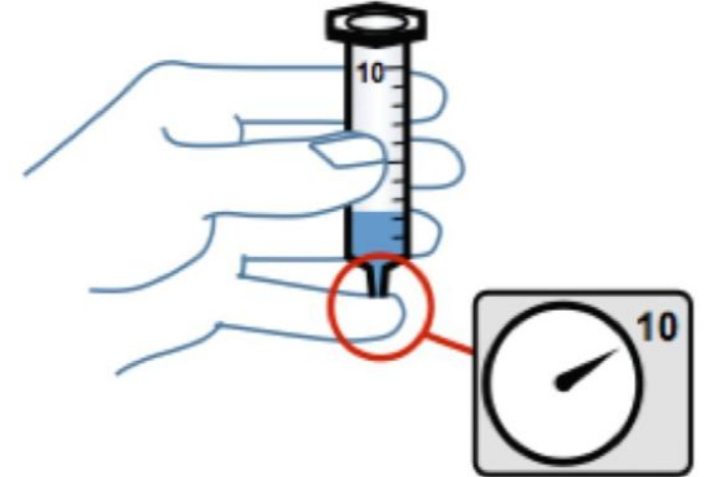
2. Cover nozzle with finger and fill 10ml



3. Release nozzle & start timer

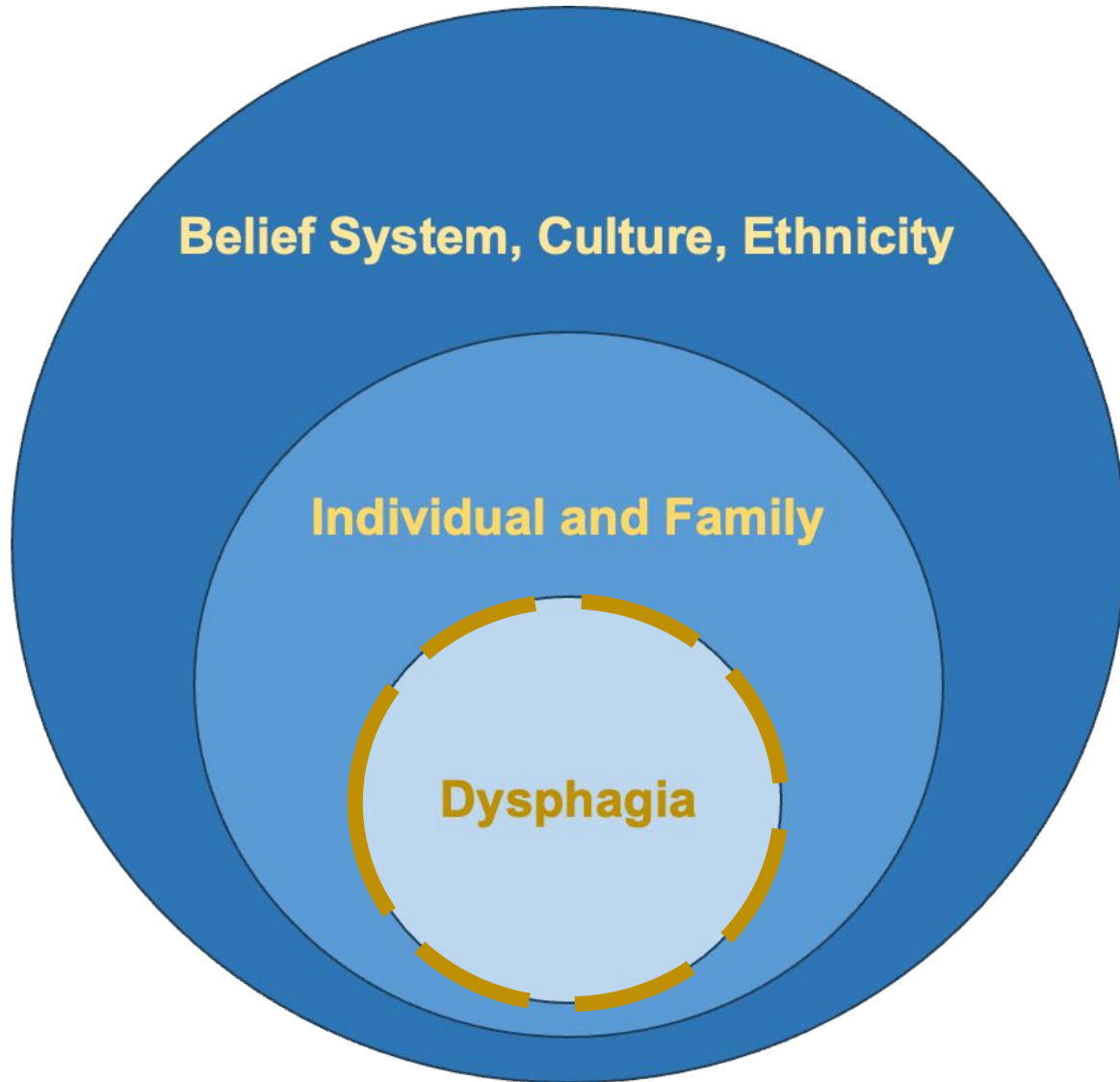


4. Stop at 10 seconds



IDDSI FLOW TEST INSTRUCTIONS

Person, Family, and Community Centered Care

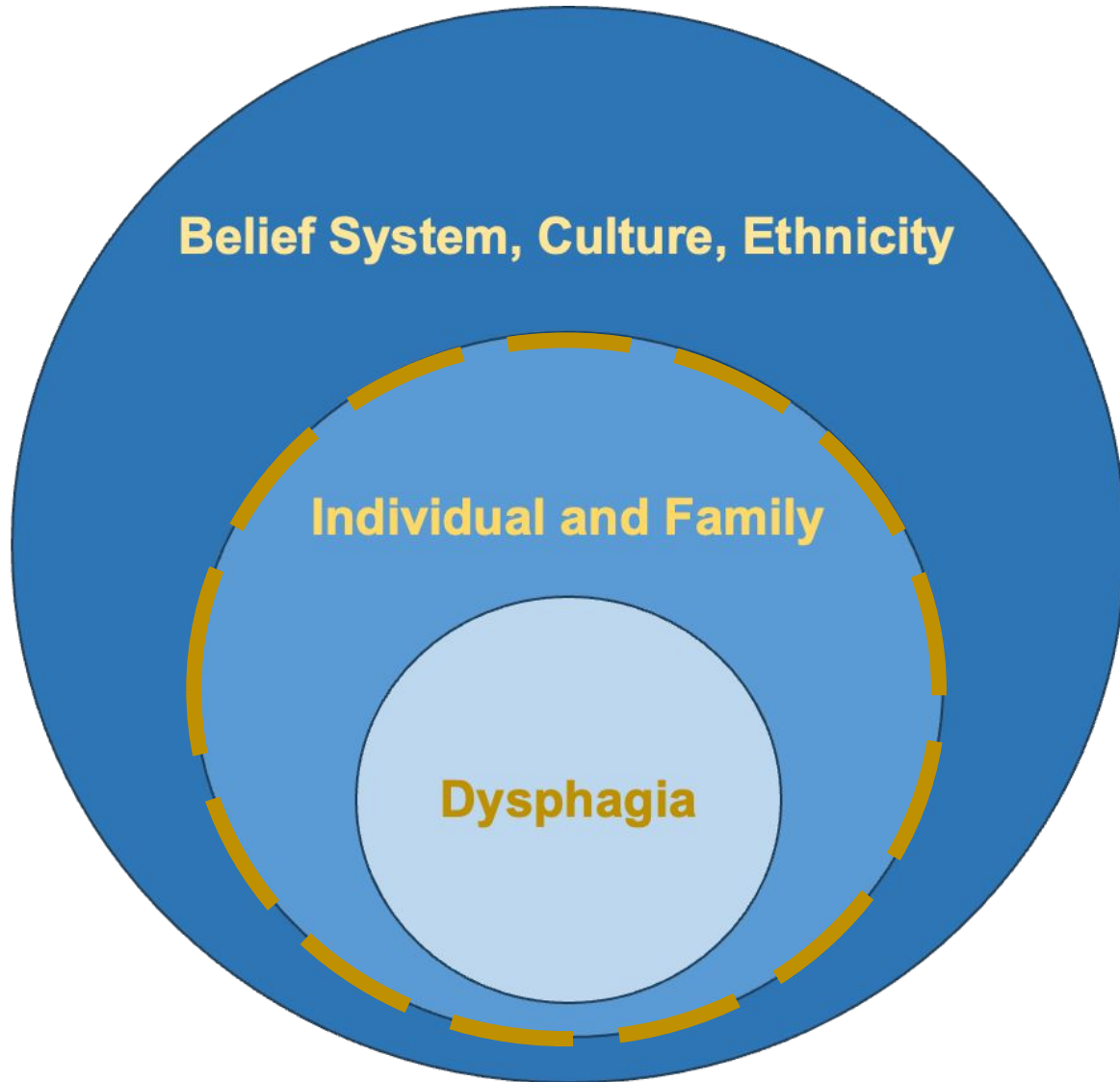


Risks from dysphagia:
dehydration, malnutrition,
pneumonia

Restrictions: “safe” textures

Limitations: how, where, and
what the person can eat & drink

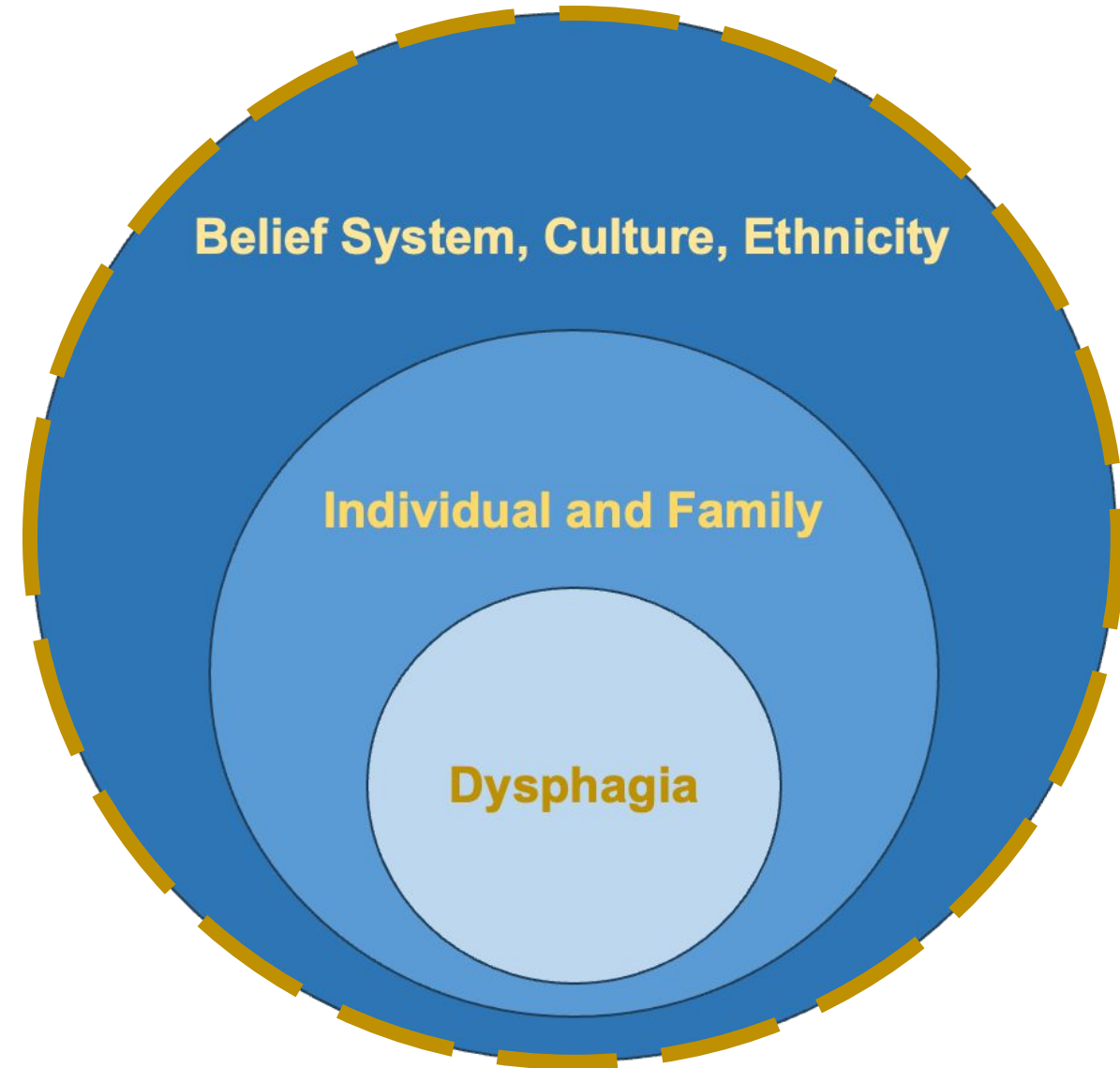
Person, Family, and Community Centered Care



Life participation impacts:
work and family obligations,
mutually enjoyed activities,
social support and interactions

Financial impacts:
cost of supplies / thickener

Person, Family, and Community Centered Care



Traditional caretaking roles

Independence

Faith/religion

Discussion and Q&A

Dysphagia Awareness by Ianessa Humbert, PhD, CCC-SLP



Connect with the lab!



“NYU Swallowing Research Lab”



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