

^t STOMACH THIS



*The Digestive System in
American Sign Language and English*
WITH PAUL BUTTENHOFF AND CARA BARNETT



[Click here to see ASL version of title](#)

[Click here to go to Table of Contents](#)

This project is a creation of
the COLLEGE OF ST. CATHERINE
in partnership
with SLICES, LLC;
RSA Region V ITP Award #H160A000008



2002



Distributed in collaboration with the *Minnesota Region III Low Incidence Project*

Table of Contents

INSTRUCTIONS FOR USING THIS CD-ROM	3	WARM-UP LECTURE: ENGLISH TRANSCRIPT	10
EDUCATIONAL PURPOSES	4	TECHNICAL LECTURE: ENGLISH TRANSCRIPT	12
MEET THE INSTRUCTORS	5	WARM-UP LECTURE: ASL NOTES	16
SPECIALIZED VOCABULARY AND DIAGRAMS	6	TECHNICAL LECTURE: ASL NOTES	18
WARM-UP LECTURES	7	PRINT VERSION OF TRANSCRIPT/NOTES	21
TECHNICAL LECTURES	8	CREDITS FOR THIS PROJECT	31
TRANSCRIPTS OF INTRODUCTIONS	9	RSA REGION V ITP FACT SHEET	32

To go to any of these pages, you can click on their title or page number on this Table of Contents. Each page has a link that will bring you back to this page if you wish to use this for navigation. You can also click on the Red Arrows to go to the next or previous page. Finally, you can click on the Navigation Panel toolbar, located to the right of the Printer Icon at the top of the screen. Then, look for the *Bookmark* tab, instead of the *Thumbnails*. These bookmarks serve as links to guide you throughout the document.



Using this CD-ROM

Technical Stuff

Navigating through Acrobat Reader:



Each page has navigation links sending you on, or taking you back to the Table of Contents. On the Table of Contents page, you can click on the words of any of those pages, and it will take you there. You can also click on the BOOKMARK tabs (pictured and located in the upper left of your screen (Version 5.0) and you will see a series of navigation links. The red arrows take you to the previous and next pages.

Playing Movies:

The movies are connected to the Acrobat Reader File and are located in the Movies Folder on your CD. By clicking on the places indicated on the page, Acrobat Reader automatically starts the QuickTime program to play the movie. If you have not installed QuickTime, see the *ReadMeFirst* file on the CD for links of where you can download this free software.

Some movies are formatted to play within the visible window, and not as a pop-up window. These movies are activated simply by clicking on the picture, can be stopped by clicking on another part of the page. You can also adjust the viewing size by utilizing the controls on the Menu bar to magnify the page. Change the magnification and use the scrollbars until the movie fits within the screen and plays at a scale that your computer can play fluidly.



Once you start playing a movie, you can use the control bar at the bottom of the movie's window to move forward or backward in the movie, or to pause it. **To exit a movie before it is finished, press ESC located in the upper left part of your keyboard.**

Troubleshooting

When I click on the movies, they won't work?

Mac OS X Users: At time of production, Acrobat Reader is not fully functional and will not play movies in pop-up windows. (2x and Max.) Use the QuickTime option or click on the picture to play within the window.

For other users: There are two possible problems and solutions. First, check to make sure that you have QuickTime 4 or better installed on your computer. See the *ReadMeFirst* file for information on how to do this. Second, make sure that you have Acrobat Reader 4 or higher installed. Acrobat Reader 3 will allow you to read this file, but will not play the movies correctly. The *ReadMeFirst* file has info on how to upgrade your version of Acrobat Reader.

When I play the movies in the small mode, it is fine; but in large modes, the movies are choppy and hard to read. Any possibilities?

The computer processor is not fast enough or your CD drive doesn't deliver the information fast enough. Either try the CD on a faster computer, or play the smaller versions of the movies.

The movies are too light or too dark.

Unfortunately, the settings of Mac and PC monitors are different. Movies play lighter on Macs and darker on PCs. You can adjust your own monitor if necessary from your control panel, but the movies were produced to try to be a compromise and work on both.

*The **Max** mode is no different than **2x**.*

This means your monitor is set to a resolution of 800 x 600. In order to take advantage of playing full screen, go to your control panels and set your resolution to 1024 x 768 or greater.

For updated support, go to: www.digiterp.com/support



Hit **ESC** to exit movie windows.

[Table of Contents](#)



Educational Purpose

Do you want to write up something new for this?

doug



Hit **ESC** to exit movie windows.

[Table of Contents](#)



Meet the Instructors

The movies on this page give some background about the instructors, Paul Buttenhoff and Cara Barnett. They allow an opportunity to familiarize yourself with their signing/speaking styles before starting with the actual lectures. So, be sure to meet your instructors before moving on.

Click on picture to play the movie with - in the window.

Click on 2x to to play it in larger scale.

Click on Max to play it full screen.

Click QT to open in QuickTime program.

See Using this CD-ROM for details.

Intro to Paul Buttenhoff

Intro to Cara Barnett

2x Max QT

This length of this intro is 0:21.

2x Max QT

This length of this intro is 0:41.

[Click here to see written transcripts of introductions](#)



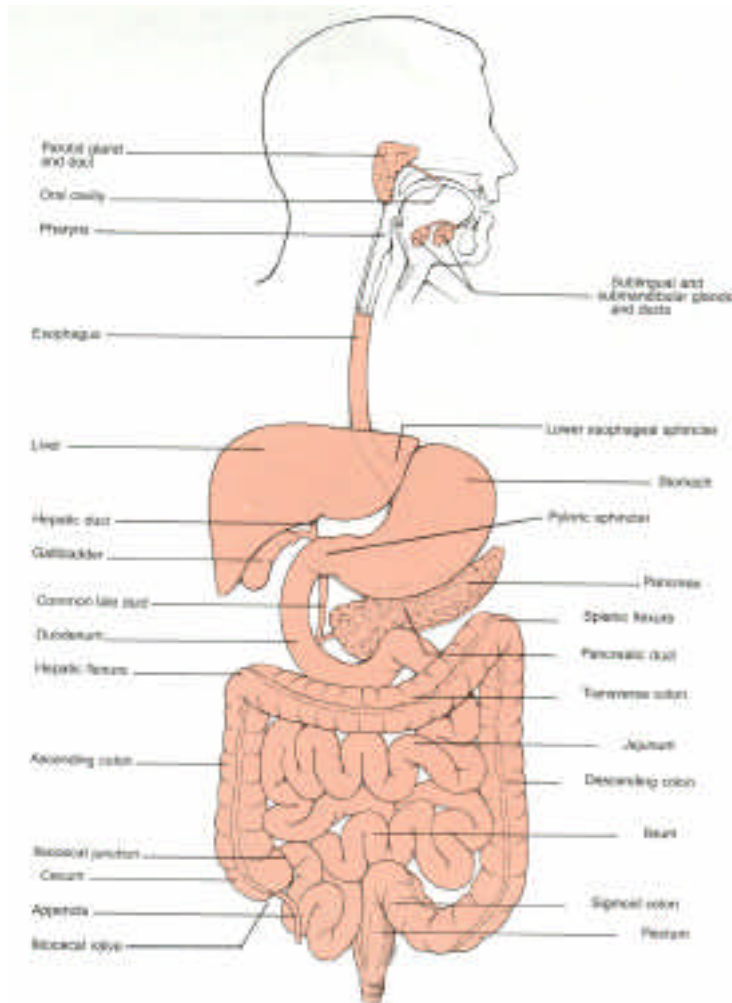
Hit **ESC** to exit movie windows.

[Table of Contents](#)



Specialized Vocabulary & Diagrams

These terms are present in the English and ASL lectures about the Digestive System. In order to prepare for the lectures, you may wish to use the diagrams and other materials to familiarize yourself with the material.



Alimentary Canal
Gastrointestinal Tract
Ingestion
Digestion
Absorption
Feces
Lipids
Disaccharide
Bolus/Boli
Gastric Juice
Hydrochloric Acid
Pepsin
Peptides
Chyme
Pyloric Sphincter
Duodenum
Jejunum
Ileum
Bile

Pancreatic Juice
Triglycerides
Amino Acids
Disaccharides
Monosaccharides
Villi
Colon
Homeostasis
Cecum
Vermiform Appendix
Rectum
Anus
Ascending Colon
Transverse Colon
Descending Colon
Sigmoid Colon
Internal Anal Sphincter
External Anal Sphincter

Digestive System--Warm-Up Lecture

Click on picture to play the movie with - in the win - dow.

These lectures cover information related to the Digestive system at a high school level.

Click on 2 x to to play it in larger scale.

Click on M a x to play it full screen.

Click Q T to open in QuickTime program.

See Using this CD-ROM for details.

Paul in English

Cara in ASL

2x **Max**
QT

This length of this lesson is 5:22.

[See written transcript of Paul's Warm-up Lecture](#)

2x **Max**
QT

This length of this lesson is 6:16.

[See Written Materials for Cara's ASL Lecture](#)



Hit **ESC** to exit movie windows.

[Table of Contents](#)



Digestive System--Technical Lecture

These lectures cover information related to the Digestive system at a level consistent with an undergraduate setting.

Click on picture to play the movie with - in the win - dow.

Click on 2 x to to play it in larger scale.

Click on M a x to play it full screen.

Click Q T to open in QuickTime program.

See Using this CD-ROM for details.

Paul in English

Cara in ASL

2x **Max**
QT

This length of this lesson is 11:11.

[See written transcript of Paul's Technical Lecture](#)

2x **Max**
QT

This length of this lesson is 16:05.

[See Written Materials for Cara's ASL Lecture](#)



Hit **ESC** to exit movie windows.

[Table of Contents](#)



Transcripts of Introductions

If you wish to view the movie while reading the transcript, you can also click on the picture to the right, and it will play in that location allowing you to see both the movie and the transcript.

PAUL BUTTENHOFF:

Hello, my name is Paul Buttenhoff. I'm an Assistant Professor here at the College of St. Catherine. I've been with the college for seven years and I primarily teach Anatomy and Physiology. I received my Bachelor's degree in Physiology from the University of Wyoming and I also have a Master's degree in Physiology from Auburn University in Alabama.

CARA BARNETT:

HELLO, MY NAME IS CARABARNETT. I AM AN INSTRUCTOR AT U OF M. I TEACH ASL THERE. I RECEIVED MY BACHELORS AT GALLAUDET IN ASL STUDIES. I ALSO RECEIVED MASTERS' DEGREE FROM WESTERN MARYLAND COLLEGE IN DEAF EDUCATION



Hit **ESC** to exit movie windows.

[Table of Contents](#)



Transcription of Warm-up Lecture

with Paul Buttenhoff

Hello my name is Paul Buttenhoff. I'm from the College of St. Catherine's. Today I'm going to talk to you about selected topics concerning the digestive system. The digestive system is one of eleven major organ systems in the body and, like all organ systems, it does have special functions on it's own but, it also works in collaboration with every other organ system.

The digestive system has four primary functions. First of all, the digestive system is designed to allow you to take food and beverages into your body. Second, the digestive system is designed to allow you to breakdown those food and beverages into smaller more useful particles that are actually usable by your body. The third, function of the digestive system is absorption. Absorption involves moving tiny nutrients from the digestive system, actually into the bloodstream, so they can be transported and used by the other tissues in the body. And last, but not least, not everything that you eat is digestible and/or absorbable, the digestive system also functions in allowing you to get rid of solid waste.

The digestive system, from an anatomical standpoint, is really divided into two sub-divisions. The first sub-division will be the digestive tract, sometimes know as the gastrointestinal tract or the alimentary canal. Primarily, this is a tube that is about thirty feet in length that starts at the mouth and ends at the anus. The alimentary canal consists of an oral cavity, a throat, an esophagus, a stomach, small intestines and the large intestines. Additionally along with the alimentary canal or digestive tract, there are accessory organs in the digestive system. These are of importance but they are not part of that big thirty-foot tube. The teeth, for example, are considered accessory, as are the salivary glands, the liver, the pancreas and the gallbladder.

All right, what we are going to do today is follow the fate of food or beverages as it starts in the mouth and travels through the digestive system. Food or beverages come in through mouth and that is where the digestive processes start. Your teeth are used first of all to physically breakdown the food particles into smaller more manageable pieces. Additionally in your mouth, chemical digestion begins, especially with sugars, using saliva. Chewing will allow you to produce a very small round ball of food, known as a bolus that will be sent through your esophagus into your stomach.

Your stomach is the first primary organ in the alimentary canal. Its functions are to mix food that it receives with gastric juice. Gastric juice is a fairly nasty cocktail of chemicals that's designed primarily to breakdown proteins. Foods that are higher in proteins concentration will remain in your stomach, exposed to gastric juice for longer periods of time than materials that don't have quite so much proteins, pass through to the small intestines more readily.



STOMACH THIS: The Digestive System in ASL and English

Transcription of Warm-up Lecture (cont.)

After food and beverages have spent time in your stomach, they then leave the stomach and enter the largest portion of your digestive system, known as the small intestine. In the small intestine chemical digestion will be very fine-tuned, will break our macro molecules, fats, sugars and proteins, down into their smallest most usable components. Food does spend quite a bit of time actually in the digestive system to facilitate this process. Once the food particles are in their smallest form they are then going to be absorbed. Absorption is a key process because without absorption, food would simply pass through your digestive system and out of your body. Absorption technically is going to involve moving the products of fats, sugars and proteins, minerals and water and a few other things, from the alimentary canal, or from this tube, actually across a few layers of tissues and into your bloodstream where they can be transported.

The large intestine is going to receive material from the small intestine and primarily when we talk about material in the large intestines, even though there is still five or six feet of journey to take before the material leaves your body, we 're primarily talking about feces. Not everything that comes into your body is digestible in the stomach or the small intestine and not everything is absorbable. The material that remains is considered a waste product and it must pass out of your body. In the large intestines, feces spend quite a bit of time and is in contact, relatively closely, with the walls of your large intestine. Your large intestine is going to do a couple of things. Primarily it's designed to reabsorb water from the components of food. We are very stingy with water and if there is any doubt, we would rather keep it in our body and deal with it with our urinary system. In the large intestine there are also bacteria that handle functions like vitamin K production and further breaking down of amino acids and carbohydrates.

Last but not least, there are two rings of muscle at the bottom of the digestive system known as the rectum and the anus collectively. Material will move out of the body through the rectum and then through a couple of rings of smooth muscle and skeletal muscle know as the anus.

[Return to Warm-Up Lectures](#)



Transcript of English Technical Lecture

with Paul Buttenhoff

Hello, my name is Paul Buttenhoff. I'm an Assistant Professor here at the College of St. Catherine's in Minneapolis. Today I'd like to talk to you a little bit about the digestive system, one of eleven major organ systems in your body. Although the digestive system is unique in it's own right, we do have to remember that it does function in conjunction with all of the ten other organs systems to allow you to be alive and to maintain homeostasis. That's what we are all about.

From an anatomical standpoint the digestive system is divided into two regions or two portions. There is a digestive tract or sometimes the alimentary canal or gastrointestinal tract that is primarily a thirty foot tube that starts at the mouth and ends at the anus. Different regions of the alimentary canal are going to be specialized and will be given different names, for example the mouth, the esophagus, the stomach, the small intestine or the large intestine. In any of these regions we are going to see there are specialized functions. The accessory organs of the digestive system will contribute to the process. Usually they are not found exactly in the digestive system but they exist outside, in the periphery. Accessory organs include things like teeth, salivary glands, the liver, the gallbladder and the pancreas and we will get to their functions in a moment.

If we talk about the digestive system as a whole we can see that it carries out three primary functions for us. First of all at the top end, the digestive system is designed to allow us to take food and beverages into our body, this process is known as ingestion. The second step, or the second function, will be known as true digestion. Once food and beverages enter our body we need to be able to break them down into their smaller usable components. Digestion will occur in several key areas and we will talk about those in a moment. After material enters your body and is broken down, the third very important step will be known as absorption. Without absorption material will simply pass through your body and will be unusable to you. Absorption will involve the movement of nutrients. Sugars, proteins and fats, vitamins and minerals from the alimentary canal or gastrointestinal tract actually into your bloodstream across several layers of tissues and then they will be available for transport to every other organ system in your body. The fourth function is the waste removal function. Not everything that you eat is digestible and or absorbable. Your large intestine, which we will get to shortly, will handle the removal of feces from the body.

What we are going to do today is pretend we are a chicken sandwich or a cheeseburger or curried lentils and we are going to start the journey through the digestive system and we're going to see what happens along the way. We're going to primarily keep track of three macromolecules. We are going to keep track of sugars, or carbohydrates. We are going to keep track of proteins and we are going to keep track of fats, or lipids along the way.



[Return to Technical Lectures](#)



Transcript of English Technical Lecture (cont.)

When food enters your mouth digestion starts. You use your teeth to physically, or mechanically, break large pieces of food down into smaller pieces of food. This is going to be important because along the way we are going to mix food particles with chemicals and with these smaller particles the surface area for chemical digestion is increased. Additionally in your mouth, saliva will be used to break carbohydrates, or sugars, down into smaller structures known as disaccharide. A disaccharide is not the smallest form of a sugar, but it's a good start. After you chew food and mix it with saliva you form a small round ball known as a bolus. Swallowing will be the process in which you move this bolus from your mouth down into your stomach through a long muscular pipe known as the esophagus.

Your stomach receives balls of food, or boli, and the primary function of the stomach will be to break down or to initiate the digestion of proteins that were found in those food particles. From an anatomical standpoint your stomach is a three-dimensional mixing bowl. It's got several layers of muscle that are designed to allow your stomach to contract or shrink in a three-dimensional fashion. Additionally, the walls of the stomach produce a fluid known as gastric juice. Gastric juice primarily will be designed to help you break down proteins. In gastric juice we're going to find general water, we'll find hydrochloric acid, or stomach acid, and we're going to find a very important enzyme that will act as a chemical scissors to start breaking proteins down into their smaller pieces. In the stomach, pepsin will break proteins into smaller chains known as peptides. That is the primary function of your stomach. If you eat foods that contain a lot of proteins pepsin will have a greater job and hence food will stay in your stomach for longer periods of time. If you eat foods that contains primarily water or sugar, materials that do not contain protein, will pass relatively quickly through your stomach down to the next organ in the system. After protein digestion has started and has proceeded to a sufficient degree, material, at this point known as chyme, will enter your small intestine through a ring of smooth muscle known as the pyloric sphincter.

The digestive system, along the way, will contain several little key regions. If we had to talk about a region that was of primary importance we would have to focus on the small intestine. Anatomically the small intestine consists of a duodenum, which is attached to the stomach and two other lengths of tube, essentially, known as the jejunum and the ileum, respectively. The small intestine will receive bile from the liver and the gallbladder and it will also receive a chemical called pancreatic juice through special ducts from the pancreas. The functions of the small intestine will be two-fold. First of all the small intestine will continue the digestion process. The process was started in your mouth and continued nicely in your stomach but now we need to finish the deal. In your small intestines fats will be broken down into smaller structures known as triglycerides. Peptides from the stomach will be broken down into smaller structures known as amino acids and the remaining sugars, that have not yet been broken down in your mouth, will be turned into disaccharides or mono-



[Return to Technical Lectures](#)



Transcript of English Technical Lecture (cont.)

saccharides. Those are the particles that we are really after. In the small intestine final digestion will occur. What started out as a cheeseburger will now be entirely different. You have spent a lot of time and energy producing useful particles, it's an energetically costly process and it's very carefully maintained. Now we must move these particles from the small intestine into the bloodstream so we can transport the products of sugar and fats, minerals and proteins, to every other tissue in your body. The small intestine, primarily the duodenum and the jejunum; the first two regions, contain many small finger-like projections known as villi. These villi are going to serve as avenues for the movement of material from your digestive system into the bloodstream, technically that's absorption. Most of the nutrients, most of the components of fats, sugars and proteins are absorbed in the duodenum and the jejunum. The ileum is going to be connected to the final portion of your digestive system known as the large intestine or sometimes referred to as the colon. In the ileum we are not going to find a lot of villi but we will see that water absorption occurs to a great degree.

After you have taken food into your body, chewed it up, sent it to your stomach for mixing and sent it to your small intestine for final digestion and absorption what we will end up with, at this point in the ileum and the in the first portion of the large intestine, will be a material known as feces. This will be undigested matter. This will be unabsorbable matter and from your bodies standpoint this is waste material and you must get this out of your body in order to remain healthy. In order to remain at homeostasis. The ileum of the small intestine is connected to the first portion of the large intestine known as the cecum, which is a small round ball shaped receiving chamber. Additionally, attached to the cecum there is a small piece of lymphatic tissue known as the vermiform appendix or sometimes simply the appendix. In humans the function of the appendix really is not known and there are many people that have their appendixes removed and suffer no ill affects.

The large intestine consists of the cecum, the colon, the rectum and the anus, down at the distil end. What we are going to do now is start at the cecum and trace the path of feces as it finishes out the process. Keep in mind we are talking about undigested, unabsorbable material at this point. From the cecum feces will move up the right side of the body through the ascending colon. The ascending colon will turn to the left and run across your body, through the transverse colon, and then turn down on the left side to become the descending colon. As soon as the descending colon travels down into an imaginary ring formed by the bones in your pelvis, the descending colon will form an S-shaped curve sometimes known as the sigmoid colon. And last but not least, the sigmoid colon will deliver feces to the rectum. The rectum will deliver, ultimately, feces out of your body through the anus. If we take a look at the walls of the ascending, transverse, descending or sigmoid colon we will see that they are constructed a little bit differently than the walls of any other tissue in your digestive system. They do consists of large, hollow cup-shaped pouches that will be crucial for allowing you to absorb water



[Return to Technical Lectures](#)



Transcript of English Technical Lecture (cont.)

from undigested, unabsorbed material. The large intestine does function very heavily in allowing you to get water from the foods and beverages that you eat. Additionally in your large intestines we are going to find large amounts of bacteria, helpful bacteria by the way, and these bacteria will handle several functions. For example, your intestinal bacteria will produce vitamin K, a very important component in blood clotting. Your intestinal bacteria will also help you further metabolize proteins and sugars, functions that could not take place in your small intestines.

As material travels through the ascending, transverse, descending and sigmoid colon it collects at the rectum. Special components of your nervous system in the rectum can detect increased presence of feces or increased stretch in the walls. Information will be sent to your brain and you will perceive that as the urge to use the restroom. From the rectum material will move out of your body through a structure known as the anus. The anus actually consists of two rings of muscle, an internal anal sphincter and an external anal sphincter. Because the external anal sphincter contains muscle that you can voluntarily control, you should consciously have control over the movement of feces from the rectum into the external environment.



[Return to Technical Lectures](#)



Notes for ASL Warm-up Lecture

with Cara Barnett

INTRO:

TODAY TALK ABOUT WHAT? STOMACH. DIGESTIVE SYSTEM ITSELF ONE OF 11 MAJOR ORGAN SYSTEM IN BODY. HAVE SPECIAL FUNCTIONS ON ITS OWN. BUT WORK WITH OTHER ORGANS IN BODY.

NOW, DIGESTIVE HAVE 4 PARTS.

FIRST- DIGESTIVE ALLOW YOU FOOD DRINK IN YOUR BODY.

SECOND- DIGESTIVE ALLOW FOOD DIVIDE SMALL USEFUL PARTICLES CAN USE IN YOUR BODY

THIRD- STOMACH ABSORB. ABSORB WHAT? SMALL NUTRIENTS FROM DIGESTIVE SYSTEM TO BLOOD. BLOOD BRING TO TISSUES IN BODY.

LAST BUT IMPORTANT- NOT EVERYTHING YOU EAT CAN DIGEST OR ABSORB. DIGESTIVE CAN ALLOW GET RID OF SOLID WASTE.

DIGESTIVE SYSTEM DIVIDED IN TWO GROUP

1- CALLED DIGESTIVE TRACT OTHER NAME CAN GASTROINTESTINAL TRACT OR ALIMENTARY CANAL. IMPORTANT - TUBE 30 FEET BIG START MOUTH TO ANUS.

ALIMENTARY CANAL HAVE ORAL CAVITY, THROAT, ESOPHAGUS, STOMACH, SMALL INTESTINES AND LARGE INTESTINES. SOME HAVE ADD HELP TO TUBE LIKE TEETH, SALIVARY GLANDS, LIVER, PANCREAS AND GALLBLADDER.

NOW- FOLLOW FOOD GO WHERE? START MOUTH GO DIGESTIVE SYSTEM. FOOD - DRINK GO MOUTH TEETH HELP BREAK-DOWN FOOD. SMALL. SMALL IN MOUTH HAVE CHEMICAL - SUGAR USING SALIVA. CHEWING HELP MAKE SMALL ROUND BALL OF FOOD CALLED BOLUS GO THROUGH ESOPHAGUS INTO STOMACH.



[Return to Warm-up Lectures](#)



STOMACH THIS: The Digestive System in ASL and English

Notes for ASL Warm-up Lecture (cont.)

STOMACH FIRST ORGAN IN ALIMENTARY CANAL. WORK WHAT? MIX FOOD WITH GASTRIC JUICE. GASTRIC JUICE MADE-UP DIFFERENT CHEMICALS HELP BREAKDOWN PROTEINS. FOOD HAVE HIGH PROTEIN WILL STAY YOUR STOMACH MORE USE GASTRIC JUICE FOR LONG TIME. OTHER HAVE LESS PROTEIN GO SMALL INTESTINES EASY.

FOOD - DRINK STAY STOMACH FINISH GO LARGE PART OF DIGESTIVE SYSTEM - THAT SMALL INTESTINES. CHEMICAL THERE. BREAK MACRO MOLECULES, FATS, SUGARS, PROTEINS BECOME MORE THIN-FINE CAN USE IN BODY. FOOD STAY IN DIGESTIVE TO PROCESS. ONCE BECOME SMALL CAN ABSORB. ABSORB IMPORTANT - IF NO ABSORB - FOOD WILL GO THROUGH BODY AND OUT. ABSORB DO-DO? MOVE FATS, SUGARS, PROTEINS, MINERALS, WATER AND OTHER THINGS FROM ALIMENTARY CANAL THRU TISSUE LAYERS TO BLOODSTREAM THEN GIVE-TO BODY.

LARGE INTESTINE GET FROM SMALL INTESTINE. LEAVE MAYBE 5 TO 6 FEET THEN OUT BODY. ALL WHAT YOU GET IN BODY NOT ALL ABSORB. LEAVE WHAT CALLED WASTE PRODUCT, FECES, MUST OUT OF BODY. LARGE INTESTINES, WORK WALLS OF LARGE INTESTINES DO-DO? ABSORB WATER AGAIN FROM FOOD.

LARGE INTESTINE HAVE BACTERIA CAN WORK MAKE VITAMIN K, ALSO MORE BREAKDOWN AMINO ACIDS AND CARBOHYDRATES.

LAST BUT IMPORTANT - TWO RINGS LAST DIGESTIVE SYSTEM CALLED RECTUM AND ANUS. LEFT OVER GO THROUGH RECTUM - GO THRU 2 RINGS SMOOTH AND SKELITAL MUSCLE THRU ANUS, OUT OF BODY.



[Return to Warm-Up Lectures](#)



Notes for ASL Technical Lecture

with Cara Barnett

INTRO:

TODAY TALK ABOUT WHAT? STOMACH. DIGESTIVE SYSTEM ITSELF ONE OF 11 MAJOR ORGAN SYSTEM IN BODY. DIGESTIVE SYSTEM DIFFERENT. ITS OWN. REMEMBER WORK WITH 10 OTHER ORGAN SYSTEMS IN BODY. HAVE SPECIAL FUNCTIONS ON ITS OWN. THAT ALLOW YOU LIVE AND HAVE BALANCED SYSTEM, HOMEOSTASIS. THAT WE ALL ABOUT.

FROM BODY VIEW DIGESTIVE SYSTEM DIVIDED 2 GROUPS. DIGESTIVE TRACT SOMETIMES CALLED ALIMENTARY CANAL OR GASTROINTESTINAL TRACT - 30 FOOT TUBE START MOUTH TO ANUS. DIFFERENT NAMES FOR ALIMENTARY CANAL WILL GIVE - FOR EXAMPLE - MOUTH, ESOPHAGUS, STOMACH, SMALL INTESTINE, LARGE INTESTINE. ALL THAT WILL GIVE THEIR JOBS. ORGANS RELATED DIGESTIVE SYSTEM IMPORTANT. TEND TO NOT FIND IN DIGESTIVE SYSTEM BUT OUTSIDE. ORGANS LIKE TEETH, SALIVARY GLANDS, LIVER, GALLBLADDER AND PANCREAS WILL EXPLAIN.

IF TALK ABOUT DIGESTIVE SYSTEM WHOLE CAN SEE THAT HAVE FOUR IMPORTANT JOBS.

1) DIGESTIVE SYSTEM JOB ALLOW US TAKE FOOD DRINK IN BODY THAT CALLED INGESTION.

2) 2ND STEP CALLED TRUE DIGESTION. ONCE FOOD DRINK IN BODY NEED BREAKDOWN SMALL PART. DIGESTION HAVE IMPORTANT AREAS. FOOD DRINK ENTER YOUR BODY THEN BREAK DOWN.

3) NEXT IMPORTANT STEP THAT ABSORB. IF NO ABSORB. FOOD DRINK WILL EASY GO THRU BODY MEAN NOTHING. ABSORB MOVE NUTRIENTS TO BODY. SUGARS, PROTEINS, FATS, VITAMINS, MINERALS FROM ALIMENTARY CANAL BLOODSTREAM SEVERAL LAYERS TISSUES CAN ABSORB. CAN BRING GIVE ORGAN SYSTEMS BODY.

4) WASTE REMOVAL FUNCTION. ALL YOU EAT NOT DISGESTED OR ABSORBED. LARGE INTESTINE WILL TAKE CARE OF REMOVAL FECES.

NOW PRETEND THERE CHICKEN SANDWICH OR CHEESEBURGER OR CURRIED LENTILS. NOW FOLLOW WHERE GO IN DIGESTIVE SYSTEM. SEE WHAT HAPPENS. IMPORTANT FOLLOW THREE MACROMOLECUES. WATCH WHERE SUGARS (CARBOHYDRATES) DO-DO. WATCH PROTEINS AND FATS (LIPIDS).



[Return to Technical Lectures](#)



STOMACH THIS: The Digestive System in ASL and English

Notes for ASL Technical Lecture (cont.)

FOOD ENTER MOUTH DIGESTION START THERE. USE TEETH BREAK DOWN FOOD SMALL. THAT IMPORTANT MIX FOOD WITH CHEMICALS. SMALL PART CHEMICAL INCREASE. IN MOUTH SALIVIA USED HOW? BREAK CARBOHYDRATES, SUGARS; SMALL PART THAT CALL DISACCAHRIDES. DISACCAHRIDES SMALL PART SUGAR NOT. BUT GOOD START. CHEW FOOD MIX WITH SALVIA MAKE SMALL BALL CALLED BOLUS. SWALLOW YOU MOVE BOLUS TO STOMACH THROUGH ESOPHAGUS.

STOMACH GET FOOD BALLS OR BOLI. NOW STOMACH DO-DO? BREAKDOWN OR START DIGEST PROTEINS FOUND IN FOOD BALLS. BODY VIEW STOMACH LIKE 3-D MIXING BOWL. STOMACH HAVE LAYERS MUSCLES ALLOW CONTRACT OR SHRINK 3-D. WALLS STOMACH CAN PRODUCE GASTRIC JUICE. JUICE HELP BREAKDOWN PROTEINS. INSIDE JUICE FIND WATER, HYDROCHLORIC ACID OR STOMACH ACID. ALSO HAVE IMPORTANT ENZYME, SCISSOR LIKE, HELP BREAK PROTEINS SMALL THAT CALL PEPTIDES. PEPTIDES IMPORTANT WORK IN STOMACH. IF YOU EAT FOOD HAVE LOTS PROTEIN, PEPSIN WORK WORK FOOD STAY LONG IN STOMACH. IF YOU EAT FOOD HAVE WATER OR SUGAR OR FOOD NOT HAVE PROTEIN, WILL GO FAST THRU STOMACH. AFTER PROTEIN DIGESTION, SATISFIED, GO SMALL INTESTINE THRU SMOOTH MUSCLE CALLED PYLORIC SPHINCTER.

DIGESTIVE SYSTEM HAVE IMPORTANT PARTS. IF DECIDE WHICH MOST IMPORTANT PART THAT WHAT SMALL INTESTINE. SMALL INTESTINE HAVE DUODENUM THAT ATTACH TO STOMACH AND OTHER 2 TUBE. SMALL INTESTINE GET BILE FROM LIVER AND GALLBLADDER. ALSO GET CHEMICAL CALLED PANCREATIC JUICE THROUGH SPECIAL DUCTS FROM PANCREAS. 2 FOLD IN SMALL INTESTINE. FOOD GO DOWN EASY NOW MUST FINISH. FATS NOW IN SMALL INTESTINE DIVIDED AGAIN NOW CALLED TRIGLYCERIDES. PEPTIDES IN STOMACH DIVIDED SMALL CALLED AMINO ACIDS AND LEAVE SUGARS THAT NOT YET DIVIDED IN MOUTH BECOME DISACCHARIDES OR MONOSACCHARIDES. THAT WOW IMPORTANT. FINAL DIGESTION HAPPEN IN SMALL INTESTINES.

BEFORE CHEESEBURGER EAT, NOW WOW DIFFERENT. BODY TIME ENERGY WORK WORK PROCESS CAREFULLY PROCESS... NOW MUST BRING LEAVE THINGS FROM SMALL INTESTINES TO BLOODSTREAM NOW CAN GIVE SUGAR, FATS, MINERALS, PROTEINS TO TISSUES IN BODY. SMALL INTESTINE HAVE 3 PARTS – DUODENUM, JEJUNUM AND ILEUM. INSIDE HAVE SMALL FINGER-LIKE STRUCTURES CALL VILLI. THAT VILLI WORK HOW? BRING THINGS FROM DIGESTIVE SYSTEM TO



[Return to Technical Lectures](#)



Notes for ASL Technical Lecture (cont.)

BLOODSTREAM HOW ABSORB. MOST NUTRIENTS, FATS, SUGARS, PROTEINS ABSORB IN DUODENUM AND JEJUNUM. ILEUM CONNECT FINAL PART DIGESTIVE SYSTEM CALLED LARGE INTESTINE SAME AS COLON. ILEUM INSIDE FIND VILLI NO BUT LOT OF WATER ABSORB.

EAT FOOD FINISH, CHEW, SEND STOMACH TO MIX, SEND SMALL INTESTINE FOR FINAL DIGESTION AND ABSORB. IN ILEUM LEFT CALL FECES. NOT DIGEST LEFTOVERS. THAT UNABSORBABLE FROM BODY. MUST GET OUT THEN CAN STAY HEALTHY. BODY GOOD CALL HOMEOSTASIS. ILEUM IN SMALL INTESTINE CONNECT LARGE INTESTINE CALLED CECUM. HANG FROM CECUM HAVE SMALL PIECE OF LYMPHATIC TISSUE CALL VERMAFORM APPENDIX AS APPENDIX. WHY HAVE APPENDIX NO ONE KNOW. SOME HAVE REMOVED NO SICK.

LARGE INTESTINE HAVE CECUM, COLON, RECTUM AND ANUS. NOW FECES GO START CECUM TRACE PATH GO WHERE. KEEP MIND TALK ABOUT THAT NOT DIGEST NOT ABSORB. THERE-IN CECUM FECES, WILL GO ASCENDING COLON, UP RIGHT SIDE BODY GO LEFT ACROSS TRANSVERSE COLON GO DOWN, DESCENDING COLON BECOME LIKE S-SHAPE THAT CALLED SIGMOID COLON. LAST BUT IMPORTANT, SIGMOID COLON BRING FECES TO RECTUM. RECTUM BRING FECES OUT THRU ANUS.

LOOK WALLS TISSUES IN SIGMOID COLON SEE DIFFERENT FROM OTHER ORGANS. HAVE LARGE HOLLOW CUPS POUCHES IMPORTANT ALLOW ABSORB WATER FROM UNDIGESTED, UNABSORBED MATERIAL. LARGE INTESTINE WORK HARD ALLOW YOU GET WATER FROM FOOD AND DRINK. LARGE INTESTINE YOU FIND BACTERIA, GOOD BACTERIA. THAT BACTERIA HELP IMPORTANT FUNCTIONS. FOR EXAMPLE, INTESTINAL BACTERIA WILL MAKE VITAMIN-K, CAN HELP BLOOD CLOTTING. INTESTINAL BACTERIA CAN HELP BALANCE PROTEINS AND SUGARS. THAT CAN'T ABSORB IN SMALL INTESTINES.

NOW MATERIALS GO THRU COLON, LAST GO RECTUM. WALLS IN RECTUM HAVE SPECIAL TISSUE SEND SIGNALS CAN TELL HAVE FECES INCREASE WALLS. WILL LET YOUR BRAIN READY GO BATHROOM. RECTUM NEXT ANUS- FECES GO OUT. ANUS HAVE 2-RINGS MUSCLE CALLED INTERNAL ANAL SPHINCTER AND EXTERNAL ANAL SPHINCTER. EXTERNAL ANAL SPHINCTER HAVE MUSCLES YOU CAN CONTROL. YOU CAN CONTROL WASTE MOVEMENT FROM RECTUM, OUT ANUS OUT, BODY.



[Return to Technical Lectures](#)



STOMACH THIS: THE DIGESTIVE SYSTEM IN ASL AND ENGLISH

technically is going to involve moving the products of fats, sugars and proteins, minerals and water and a few other things, from the alimentary canal, or from this tube, actually across a few layers of tissues and into your bloodstream where they can be transported.

The large intestine is going to receive material from the small intestine and primarily when we talk about material in the large intestines, even though there is still five or six feet of journey to take before the material leaves your body, we 're primarily talking about feces. Not everything that comes into your body is digestible in the stomach or the small intestine and not everything is absorbable. The material that remains is considered a waste product and it must pass out of your body. In the large intestines, feces spend quite a bit of time and is in contact, relatively closely, with the walls of your large intestine. Your large intestine is going to do a couple of things. Primarily it's designed to reabsorb water from the components of food. We are very stingy with water and if there is any doubt, we would rather keep it in our body and deal with it with our urinary system. In the large intestine there are also bacteria that handle functions like vitamin K production and further breaking down of amino acids and carbohydrates.

Last but not least, there are two rings of muscle at the bottom of the digestive system known as the rectum and the anus collectively. Material will move out of the body through the rectum and then through a couple of rings of smooth muscle and skeletal muscle known as the anus.

TECHNICAL LECTURE--ENGLISH TRANSCRIPT

with Paul Buttenhoff

Hello, my name is Paul Buttenhoff. I'm an Assistant Professor here at the College of St. Catherine's in Minneapolis. Today I'd like to talk to you a little bit about the digestive system, one of eleven major organ systems in your body. Although the digestive system is unique in its own right, we do have to remember that it does function in conjunction with all of the ten other organs systems to allow you to be alive and to maintain homeostasis. That's what we are all about.

From an anatomical standpoint the digestive system is divided into two regions or two portions. There is a digestive tract or sometimes the alimentary canal or gastrointestinal tract that is primarily a thirty foot tube that starts at the mouth and ends at the anus. Different regions of the alimentary canal are going to be specialized and will be given different names, for example the mouth, the esophagus, the stomach, the small intestine or the large intestine. In any of these regions we are going to see there are specialized functions. The accessory organs of the digestive system will contribute to the process. Usually they are not found exactly in the digestive system but they exist outside, in the periphery. Accessory organs include things like teeth, salivary glands, the liver, the gallbladder and the pancreas and we will get to their functions in a moment.

If we talk about the digestive system as a whole we can see that it carries out three primary functions for us. First of all at the top end, the digestive system is designed to allow us to take food and beverages into our body, this process is known as ingestion. The second step, or the second function, will be known as true digestion. Once food and beverages enter our body we need to be able to break them down into their smaller usable components. Digestion will occur in several key areas and we will talk about those in a moment. After material enters your body and is broken down, the third very important step will be known as absorption. Without absorption material will simply pass through your body and will be unusable to you. Absorption will involve the movement of nutrients. Sugars, proteins and fats, vitamins and minerals from the alimentary canal or gastrointestinal tract actually into your bloodstream across several layers of tissues and then they will be available for transport to every other organ system in your body. The fourth function is the waste removal function. Not everything that you eat is digestible and or absorbable. Your large intestine, which we will get to shortly, will handle the removal of feces from the body.

What we are going to do today is pretend we are a chicken sandwich or a cheeseburger or curried lentils and we are going to start the journey through the digestive system and we're going to see what happens along the way. We're going to primarily keep track of three macromolecules. We are going to keep track of sugars, or carbohydrates. We are going to keep track of proteins and we are going to keep track of fats, or lipids along the way.

When food enters your mouth digestion starts. You use your teeth to physically, or mechanically, break large pieces of food down into smaller pieces of food. This is going to be important because along the way we are going to mix food particles with chemicals and with these smaller particles the surface area for chemical digestion is increased. Additional in your mouth, saliva will be used to break carbohydrates, or sugars, down into smaller structures known as disaccharide. A disaccharide is not the smallest form of a sugar, but it's a good start. After you chew food and mix it with saliva you form a small round ball known as a bolus. Swallowing will be the process in which you move this bolus from your mouth down into your stomach through a long muscular pipe known as the esophagus.

STOMACH THIS: THE DIGESTIVE SYSTEM IN ASL AND ENGLISH

Your stomach receives balls of food, or boli, and the primary function of the stomach will be to break down or to initiate the digestion of proteins that were found in those food particles. From an anatomical standpoint your stomach is a three-dimensional mixing bowl. It's got several layers of muscle that are designed to allow your stomach to contract or shrink in a three-dimensional fashion. Additionally, the walls of the stomach produce a fluid known as gastric juice. Gastric juice primarily will be designed to help you break down proteins. In gastric juice we're going to find general water, we'll find hydrochloric acid, or stomach acid, and we're going to find a very important enzyme that will act as a chemical scissors to start breaking proteins down into their smaller pieces. In the stomach, pepsin will break proteins into smaller chains known as peptides. That is the primary function of your stomach. If you eat foods that contain a lot of proteins pepsin will have a greater job and hence food will stay in your stomach for longer periods of time. If you eat foods that contains primarily water or sugar, materials that do not contain protein, will pass relatively quickly through your stomach down to the next organ in the system. After protein digestion has started and has proceeded to a sufficient degree, material, at this point known as chyme, will enter your small intestine through a ring of smooth muscle known as the pyloric sphincter.

The digestive system, along the way, will contain several little key regions. If we had to talk about a region that was of primary importance we would have to focus on the small intestine. Anatomically the small intestine consists of a duodenum, which is attached to the stomach and two other lengths of tube, essentially, known as the jejunum and the ileum, respectively. The small intestine will receive bile from the liver and the gallbladder and it will also receive a chemical called pancreatic juice through special ducts from the pancreas. The functions of the small intestine will be two-fold. First of all the small intestine will continue the digestion process. The process was started in your mouth and continued nicely in your stomach but now we need to finish the deal. In your small intestines fats will be broken down into smaller structures known as triglycerides. Peptides from the stomach will be broken down into smaller structures known as amino acids and the remaining sugars, that have not yet been broken down in your mouth, will be turned into disaccharides or monosaccharides. Those are the particles that we are really after. In the small intestine final digestion will occur. What started out as a cheeseburger will now be entirely different. You have spent a lot of time and energy producing useful particles, it's an energetically costly process and it's very carefully maintained. Now we must move these particles from the small intestine into the bloodstream so we can transport the products of sugar and fats, minerals and proteins, to every other tissue in your body. The small intestine, primarily the duodenum and the jejunum; the first two regions, contain many small finger-like projections known as villi. These villi are going to serve as avenues for the movement of material from your digestive system into the bloodstream, technically that's absorption. Most of the nutrients, most of the components of fats, sugars and proteins are absorbed in the duodenum and the jejunum. The ileum is going to be connected to the final portion of your digestive system known as the large intestine or sometimes referred to as the colon. In the ileum we are not going to find a lot of villi but we will see that water absorption occurs to a great degree.

After you have taken food into your body, chewed it up, sent it to your stomach for mixing and sent it to your small intestine for final digestion and absorption what we will end up with, at this point in the ileum and the in the first portion of the large intestine, will be a material known as feces. This will be undigested matter. This will be unabsorbable matter and from your bodies standpoint this is waste material and you must get this out of your body in order to remain healthy. In order to remain at homeostasis. The ileum of the small intestine is connected to the first portion of the large intestine known as the cecum, which is a small round ball shaped receiving chamber. Additionally, attached to the cecum there is a small piece of lymphatic tissue known as the vermiform appendix or sometimes simply the appendix. In humans the function of the appendix really is not known and there are many people that have their appendixes removed and suffer no ill affects.

STOMACH THIS: THE DIGESTIVE SYSTEM IN ASL AND ENGLISH

The large intestine consists of the cecum, the colon, the rectum and the anus, down at the distal end. What we are going to do now is start at the cecum and trace the path of feces as it finishes out the process. Keep in mind we are talking about undigested, unabsorbable material at this point. From the cecum feces will move up the right side of the body through the ascending colon. The ascending colon will turn to the left and run across your body, through the transverse colon, and then turn down on the left side to become the descending colon. As soon as the descending colon travels down into an imaginary ring formed by the bones in your pelvis, the descending colon will form an S-shaped curve sometimes known as the sigmoid colon. And last but not least, the sigmoid colon will deliver feces to the rectum. The rectum will deliver, ultimately, feces out of your body through the anus. If we take a look at the walls of the ascending, transverse, descending or sigmoid colon we will see that they are constructed a little bit differently than the walls of any other tissue in your digestive system. They do consist of large, hollow cup-shaped pouches that will be crucial for allowing you to absorb water from undigested, unabsorbed material. The large intestine does function very heavily in allowing you to get water from the foods and beverages that you eat. Additionally in your large intestines we are going to find large amounts of bacteria, helpful bacteria by the way, and these bacteria will handle several functions. For example, your intestinal bacteria will produce vitamin K, a very important component in blood clotting. Your intestinal bacteria will also help you further metabolize proteins and sugars, functions that could not take place in your small intestines.

As material travels through the ascending, transverse, descending and sigmoid colon it collects at the rectum. Special components of your nervous system in the rectum can detect increased presence of feces or increased stretch in the walls. Information will be sent to your brain and you will perceive that as the urge to use the restroom. From the rectum material will move out of your body through a structure known as the anus. The anus actually consists of two rings of muscle, an internal anal sphincter and an external anal sphincter. Because the external anal sphincter contains muscle that you can voluntarily control, you should consciously have control over the movement of feces from the rectum into the external environment.

WARM-UP LECTURE--ASL NOTES

with Cara Barnett

INTRO:

TODAY TALK ABOUT WHAT? STOMACH. DIGESTIVE SYSTEM ITSELF ONE OF 11 MAJOR ORGAN SYSTEM IN BODY. HAVE SPECIAL FUNCTIONS ON ITS OWN. BUT WORK WITH OTHER ORGANS IN BODY.

NOW, DIGESTIVE HAVE 4 PARTS.

FIRST- DIGESTIVE ALLOW YOU FOOD DRINK IN YOUR BODY.

SECOND- DIGESTIVE ALLOW FOOD DIVIDE SMALL USEFUL PARTICLES CAN USE IN YOUR BODY

THIRD- STOMACH ABSORB. ABSORB WHAT? SMALL NUTRIENTS FROM DIGESTIVE SYSTEM TO BLOOD. BLOOD BRING TO TISSUES IN BODY.

LAST BUT IMPORTANT- NOT EVERYTHING YOU EAT CAN DIGEST OR ABSORB. DIGESTIVE CAN ALLOW GET RID OF SOILD WASTE.

DIGESTIVE SYSTEM DIVIDED IN TWO GROUP

1- CALLED DIGESTIVE TRACT OTHER NAME CAN GASTROINTESTINAL TRACT OR ALIMENTARY CANAL. IMPORTANT - TUBE 30 FEET BIG START MOUTH TO ANUS.

ALIMENTARY CANAL HAVE ORAL CAVITY, THROAT, ESOPHAGUS, STOMACH, SMALL INTESTINES AND LARGE INTESTINES. SOME HAVE ADD HELP TO TUBE LIKE TEETH, SALIVARY GLANDS, LIVER, PANCREAS AND GALLBLADDER.

NOW- FOLLOW FOOD GO WHERE? START MOUTH GO DIGESTIVE SYSTEM. FOOD - DRINK GO MOUTH TEETH HELP BREAKDOWN FOOD. SMALL. SMALL IN MOUTH HAVE CHEMICAL - SUGAR USING SALIVA. CHEWING HELP MAKE SMALL ROUND BALL OF FOOD CALLED BOLUS GO THROUGH ESOPHAGUS INTO STOMACH.

STOMACH FIRST ORGAN IN ALIMENTARY CANAL. WORK WHAT? MIX FOOD WITH GASTRIC JUICE. GASTRIC JUICE MADE-UP DIFFERENT CHEMICALS HELP BREAKDOWN PROTEINS. FOOD HAVE HIGH PROTEIN WILL STAY YOUR STOMACH MORE USE GASTRIC JUICE FOR LONG TIME. OTHER HAVE LESS PROTEIN GO SMALL INTESTINES EASY.

FOOD - DRINK STAY STOMACH FINISH GO LARGE PART OF DIGESTIVE SYSTEM - THAT SMALL INTESTINES. CHEMICAL THERE. BREAK MACRO MOLECUES, FATS, SUGARS, PROTEINS BECOME MORE THIN-FINE CAN USE IN BODY. FOOD STAY IN DIGESTIVE TO PROCESS. ONCE BECOME SMALL CAN ABSORB. ABSORB IMPORTANT - IF NO ABSORB - FOOD WILL GO THROUGH BODY AND OUT. ABSORB DO-DO? MOVE FATS, SUGARS, PROTEINS, MINERALS, WATER AND OTHER THINGS FROM ALIMENTARY CANAL THRU TISSUE LAYERS TO BLOODSTREAM THEN GIVE-TO BODY.

STOMACH THIS: THE DIGESTIVE SYSTEM IN ASL AND ENGLISH

LARGE INTESTINE GET FROM SMALL INTESTINE. LEAVE MAYBE 5 TO 6 FEET THEN OUT BODY. ALL WHAT YOU GET IN BODY NOT ALL ABSORB. LEAVE WHAT CALLED WASTE PRODUCT, FECES, MUST OUT OF BODY. LARGE INTESTINES, WORK WALLS OF LARGE INTESTINES DO-DO? ABSORB WATER AGAIN FROM FOOD.

LARGE INTESTINE HAVE BACTERIA CAN WORK MAKE VITAMIN K, ALSO MORE BREAKDOWN AMINO ACIDS AND CARBOHYDRATES.

LAST BUT IMPORTANT - TWO RINGS LAST DIGESTIVE SYSTEM CALLED RECTUM AND ANUS. LEFT OVER GO THROUGH RECTUM - GO THRU 2 RINGS SMOOTH AND SKELITAL MUSCLE THRU ANUS, OUT OF BODY.

TECHNICAL LECTURE--ASL NOTES

with Cara Barnett

INTRO:

TODAY TALK ABOUT WHAT? STOMACH. DIGESTIVE SYSTEM ITSELF ONE OF 11 MAJOR ORGAN SYSTEM IN BODY. DIGESTIVE SYSTEM DIFFERENT. ITS OWN. REMEMBER WORK WITH 10 OTHER ORGAN SYSTEMS IN BODY. HAVE SPECIAL FUNCTIONS ON ITS OWN. THAT ALLOW YOU LIVE AND HAVE BALANCED SYSTEM, HOMEOSTASIS. THAT WE ALL ABOUT.

FROM BODY VIEW DIGESTIVE SYSTEM DIVIDED 2 GROUPS. DIGESTIVE TRACT SOMETIMES CALLED ALIMENTARY CANAL OR GASTROINTESTINAL TRACT - 30 FOOT TUBE START MOUTH TO ANUS. DIFFERENT NAMES FOR ALIMENTARY CANAL WILL GIVE - FOR EXAMPLE - MOUTH, ESOPHAGUS, STOMACH, SMALL INTESTINE, LARGE INTESTINE. ALL THAT WILL GIVE THEIR JOBS. ORGANS RELATED DIGESTIVE SYSTEM IMPORTANT. TEND TO NOT FIND IN DIGESTIVE SYSTEM BUT OUTSIDE. ORGANS LIKE TEETH, SALIVARY GLANDS, LIVER, GALLBLADDER AND PANCREAS WILL EXPLAIN.

IF TALK ABOUT DIGESTIVE SYSTEM WHOLE CAN SEE THAT HAVE FOUR IMPORTANT JOBS.

- 1) DIGESTIVE SYSTEM JOB ALLOW US TAKE FOOD DRINK IN BODY THAT CALLED INGESTION.
- 2) 2ND STEP CALLED TRUE DIGESTION. ONCE FOOD DRINK IN BODY NEED BREAKDOWN SMALL PART. DIGESTION HAVE IMPORTANT AREAS. FOOD DRINK ENTER YOUR BODY THEN BREAK DOWN.
- 3) NEXT IMPORTANT STEP THAT ABSORB. IF NO ABSORB. FOOD DRINK WILL EASY GO THRU BODY MEAN NOTHING. ABSORB MOVE NUTRIENTS TO BODY. SUGARS, PROTEINS, FATS, VITAMINS, MINERALS FROM ALIMENTARY CANAL BLOODSTREAM SEVERAL LAYERS TISSUES CAN ABSORB. CAN BRING GIVE ORGAN SYSTEMS BODY.
- 4) WASTE REMOVAL FUNCTION. ALL YOU EAT NOT DISGESTED OR ABSORBED. LARGE INTESTINE WILL TAKE CARE OF REMOVAL FECES.

NOW PRETEND THERE CHICKEN SANDWICH OR CHEESEBURGER OR CURRIED LENTILS. NOW FOLLOW WHERE GO IN DIGESTIVE SYSTEM. SEE WHAT HAPPENS. IMPORTANT FOLLOW THREE MACROMOLECUES. WATCH WHERE SUGARS (CARBOHYDRATES) DO-DO. WATCH PROTEINS AND FATS (LIPIDS).

FOOD ENTER MOUTH DIGESTION START THERE. USE TEETH BREAK DOWN FOOD SMALL. THAT IMPORTANT MIX FOOD WITH CHEMICALS. SMALL PART CHEMICAL INCREASE. IN MOUTH SALIVIA USED HOW? BREAK CARBOHYDRATES, SUGARS; SMALL PART THAT CALL DISACCHARIDES. DISACCHARIDES SMALL PART SUGAR NOT. BUT GOOD START. CHEW FOOD MIX WITH SALVIA MAKE SMALL BALL CALLED BOLUS. SWALLOW YOU MOVE BOLUS TO STOMACH THROUGH ESOPHAGUS.

STOMACH THIS: THE DIGESTIVE SYSTEM IN ASL AND ENGLISH

STOMACH GET FOOD BALLS OR BOLI. NOW STOMACH DO-DO? BREAKDOWN OR START DIGEST PROTEINS FOUND IN FOOD BALLS. BODY VIEW STOMACH LIKE 3-D MIXING BOWL. STOMACH HAVE LAYERS MUSCLES ALLOW CONTRACT OR SHRINK 3-D. WALLS STOMACH CAN PRODUCE GASTRIC JUICE. JUICE HELP BREAKDOWN PROTEINS. INSIDE JUICE FIND WATER, HYDROCHLORIC ACID OR STOMACH ACID. ALSO HAVE IMPORTANT ENZYME, SCISSOR LIKE, HELP BREAK PROTEINS SMALL THAT CALL PEPTIDES. PEPTIDES IMPORTANT WORK IN STOMACH. IF YOU EAT FOOD HAVE LOTS PROTEIN, PEPSIN WORK WORK FOOD STAY LONG IN STOMACH. IF YOU EAT FOOD HAVE WATER OR SUGAR OR FOOD NOT HAVE PROTEIN, WILL GO FAST THRU STOMACH. AFTER PROTEIN DIGESTION, SATISFIED, GO SMALL INTESTINE THRU SMOOTH MUSCLE CALLED PYLORIC SPHINCTER.

DIGESTIVE SYSTEM HAVE IMPORTANT PARTS. IF DECIDE WHICH MOST IMPORTANT PART THAT WHAT SMALL INTESTINE. SMALL INTESTINE HAVE DUODENUM THAT ATTACH TO STOMACH AND OTHER 2 TUBE. SMALL INTESTINE GET BILE FROM LIVER AND GALLBLADDER. ALSO GET CHEMICAL CALLED PANCREATIC JUICE THROUGH SPECIAL DUCTS FROM PANCREAS. 2 FOLD IN SMALL INTESTINE. FOOD GO DOWN EASY NOW MUST FINISH. FATS NOW IN SMALL INTESTINE DIVIDED AGAIN NOW CALLED TRIGLYCERIDES. PEPTIDES IN STOMACH DIVIDED SMALL CALLED AMINO ACIDS AND LEAVE SUGARS THAT NOT YET DIVIDED IN MOUTH BECOME DISACCHARIDES OR MONOSACCHARIDES. THAT WOW IMPORTANT. FINAL DIGESTION HAPPEN IN SMALL INTESTINES.

BEFORE CHEESEBURGER EAT, NOW WOW DIFFERENT. BODY TIME ENERGY WORK WORK PROCESS CAREFULLY PROCESS... NOW MUST BRING LEAVE THINGS FROM SMALL INTESTINES TO BLOODSTREAM NOW CAN GIVE SUGAR, FATS, MINERALS, PROTEINS TO TISSUES IN BODY. SMALL INTESTINE HAVE 3 PARTS – DUODENUM, JEJUNUM AND ILEUM. INSIDE HAVE SMALL FINGER-LIKE STRUCTURES CALL VILLI. THAT VILLI WORK HOW? BRING THINGS FROM DIGESTIVE SYSTEM TO BLOODSTREAM HOW ABSORB. MOST NUTRIENTS, FATS, SUGARS, PROTEINS ABSORB IN DUODENUM AND JEJUNUM. ILEUM CONNECT FINAL PART DIGESTIVE SYSTEM CALLED LARGE INTESTINE SAME AS COLON. ILEUM INSIDE FIND VILLI NO BUT LOT OF WATER ABSORB.

EAT FOOD FINISH, CHEW, SEND STOMACH TO MIX, SEND SMALL INTESTINE FOR FINAL DIGESTION AND ABSORB. IN ILEUM LEFT CALL FECES. NOT DIGEST LEFTOVERS. THAT UNABSORBABLE FROM BODY. MUST GET OUT THEN CAN STAY HEALTHY. BODY GOOD CALL HOMEOSTASIS. ILEUM IN SMALL INTESTINE CONNECT LARGE INTESTINE CALLED CECUM. HANG FROM CECUM HAVE SMALL PIECE OF LYMPHATIC TISSUE CALL VERMAFORM APPENDIX AS APPENDIX. WHY HAVE APPENDIX NO ONE KNOW. SOME HAVE REMOVED NO SICK.

LARGE INTESTINE HAVE CECUM, COLON, RECTUM AND ANUS. NOW FECES GO START CECUM TRACE PATH GO WHERE. KEEP MIND TALK ABOUT THAT NOT DIGEST NOT ABSORB. THERE-IN CECUM FECES, WILL GO ASCENDING COLON, UP RIGHT SIDE BODY GO LEFT ACROSS TRANSVERSE COLON GO DOWN, DESCENDING COLON BECOME LIKE S-SHAPE THAT CALLED SIGMOID COLON. LAST BUT IMPORTANT, SIGMOID COLON BRING FECES TO RECTUM. RECTUM BRING FECES OUT THRU ANUS.

LOOK WALLS TISSUES IN SIGMOD COLON SEE DIFFERENT FROM OTHER ORGANS. HAVE LARGE HOLLOW CUPS POUCHES IMPORTANT ALLOW ABSORB WATER FROM UNDIGESTED,

STOMACH THIS: THE DIGESTIVE SYSTEM IN ASL AND ENGLISH

UNABSORBED MATERIAL. LARGE INTESTINE WORK HARD ALLOW YOU GET WATER FROM FOOD AND DRINK. LARGE INESTINE YOU FIND BACTERIA, GOOD BACTERIA. THAT BATERICA HELP IMPORTANT FUNCTIONS. FOR EXAMPLE, INTESTINAL BACTERIA WILL MAKE VITAMIN-K, CAN HELP BLOOD CLOTTING. INTESTINAL BACTERIA CAN HELP BALANCE PROTEINS AND SUGARS. THAT CAN'T ABSORB IN SMALL INTESTINES.

NOW MATERIALS GO THRU COLON, LAST GO RECTUM. WALLS IN RETCUM HAVE SPECIAL TIS-SUE SEND SIGNALS CAN TELL HAVE FECES INCREASE WALLS. WILL LET YOUR BRAIN READY GO BATHROOM. RECTUM NEXT ANUS- FECES GO OUT. ANUS HAVE 2-RINGS MUSCLE CALLED INTERNAL ANAL SPHINCTER AND EXTERNAL ANAL SPHINCTER. EXTERNAL ANAL SPHINCTER HAVE MUSCLES YOU CAN CONTROL. YOU CAN CONTROL WASTE MOVEMNT FROM RECTUM, OUT ANUS OUT, BODY.

Roll the Credits

This project was a collaboration of many people's minds and talents and we wish to acknowledge them here.

INSTRUCTORS/LANGUAGE MODELS:

PAUL BUTTENHOFF

CARA BARNETT

COMPUTER DESIGN AND LAYOUT:

DOUG BOWEN-BAILEY

Digiterp Communications

PRODUCER:

TODD TOURVILLE

THE STAFF OF THE RSA REGION V

INTERPRETER TRAINING PROJECT:

ADMINISTRATOR:

LAURIE SWABEY

PROJECT MANAGERS:

PAULA GAJEWSKI

RICHARD LAURION

ADMINISTRATIVE ASSISTANT:

ROSA RAMIREZ

OCTOBER 2002

To Exit--Mac: File > Quit. Windows: File > Exit.

STOMACH THIS

RSA Region V Interpreter Training Project Fact Sheet

What is the Focus of this Project?

The goal of the Rehabilitation Services Administration (RSA) of the U.S. Department of Education is to make available, through ten regional grants, support for continuing education for interpreters who work with Deaf, hard of hearing and DeafBlind people. The ultimate goal is to increase the number of certified, qualified interpreters in post-secondary and employment related settings.

The goals of the training project for Region V include:

- * Building an infrastructure in rural and urban areas across the region so that the long-term on-going need for skill maintenance and skill upgrading can be met in local areas. Some components of this include a comprehensive local and regional resource guide for interpreters and agencies, mentor development & training and independent study materials for interpreters.
- * Continuing to provide a source of qualified interpreters who have graduated from the College of St. Catherine’s four-year interpreting program, which includes specialized areas such as deaf-blind, health care and educational interpreting. These specialized courses will be offered in an intensive summer format to make them available to interpreters throughout the region. In addition, the goal has been set to see an increase of least 10% in the number of minority students/students from diverse communities completing the program.
- * Co-Sponsoring 42 workshops per year in Region V, responding to previously identified needs as well as immediate and/or on-going needs, such as preparation for certification and developing interpreting skills for working with individuals who are DeafBlind or who have low vision needs. Co-Sponsoring may be in the form of information & referral, technical assistance, advertisement and/or a contribution to the presenter’s fees/expenses.

Which states does Region V cover?

Region V includes the states of: Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

What type of support is available?

Technical Assistance: This includes assistance with any or all steps in planning and coordinating an event: locating presenters, assistance with timelines and detail work, registration coordination, fiscal coordination, advertising (including the development and mailing of flyers), printing of materials, evaluation development and summaries.

Financial: First consideration for financial support will be given to those projects that address the underserved populations identified by the Federal RSA or the Project Needs Assessment. This includes (but is not limited to) interpreters working in rural areas, interpreters working with individuals who are DeafBlind; distance-learning programs, mentoring and increasing the number of certified interpreters from diverse communities.

RID CEU sponsorship: Assistance with completing the necessary paperwork for approving CEU sponsorship for events throughout the region. As an approved sponsor, we can also be the identified sponsor of the CEUs for the event and take care of the necessary paperwork for application, documents for the event, and certificates of attendance.

Information and Referral: This includes providing contact information to individual interpreters for professional organizations, websites and other resources that may be helpful in general interpreting skill enhancement.

Any or all of the above mentioned kinds of support may be given to any project.



[Table of Contents](#)



STOMACH THIS

RSA Region U Interpreter Training Project Fact Sheet (Continued)

How will awards for support, particularly financial support, be decided?

The non-financial support is readily available to anyone – simply give us a call or send us an email at least 2 weeks prior to your event, or 45 days prior if you are requesting CEU's, and ask us if the support you are looking for is within the scope of the Project and can be available for your event.

Organizations requesting financial support will be required to complete and submit to the Project office a simple application. Applications for funding will then be sent to at least three reviewers. They will be given a set of criteria, including the goals of the Project and region, and will make recommendations for whether or not this event should be approved for funding.

How much financial support is available?

Financial support will generally be in the form of Challenge Grants. We have funding available for 7 events per state, each of the five years of the project.

What are the criteria considered by the reviewers of the Challenge Grant applications?

The criteria includes:

- * Which needs identified for this state and region does this event address? (The more needs addressed the better!)
- * What partnering agencies and organizations are identified for working on this project? (Again, the more the better!) What kinds of contributions are being made by the partnering agencies, either financial or in-kind?
- * Based on the budget submitted, does this look like a fiscally sound project? (Is it reasonably priced for attendees? Do the costs outlined seem appropriate for this size event?)

Can I apply at any time for financial or other support?

The applications for financial support will only be processed and reviewed on a monthly basis. Applications must be received in our office by the 5th of the month (or the closest business day to the 5th if it falls on a weekend) to be considered that month. Notification for awards will be given to applicants by the 30th of that month. Applications will not be accepted after an event has occurred.

What must I do once support is granted?

If the Project is co-sponsoring an event, by providing technical assistance, CEU sponsorship, and/or financial support, the grantee must provide the Project with a class roster, final budget, invoice and evaluation summary (if we are not doing the summary for the event) within 30 days of the events completion. The Project must be identified as a co-sponsor on all advertisements with the following wording:

This Workshop is Sponsored in Part by Region V ITP Award #H160A000008 at the College of St. Catherine in Partnership with SLICES, LLC

Who is staffing the Project?

Rosa Ramirez is the Administrative Assistant and can be reached Monday – Friday, 8:30 – 4:30 p.m. Richard Laurion and Paula Gajewski of SLICES, LLC share the position of Project Manager. Laurie Swabey, the Director of the Interpreting Program at the College of St. Catherine, is the Project Administrator.

How can I get more information?

Federal Interpreter Education Project
College of St. Catherine
601 25th Avenue South
Minneapolis, MN 55454
651-690-7779 (V) 651-690-7869 (TTY)
Fax: 651-690-7849
E-mail: federalprojectinfo@stkate.edu
<http://www.stkate.edu/project>

[Table of Contents](#)

