

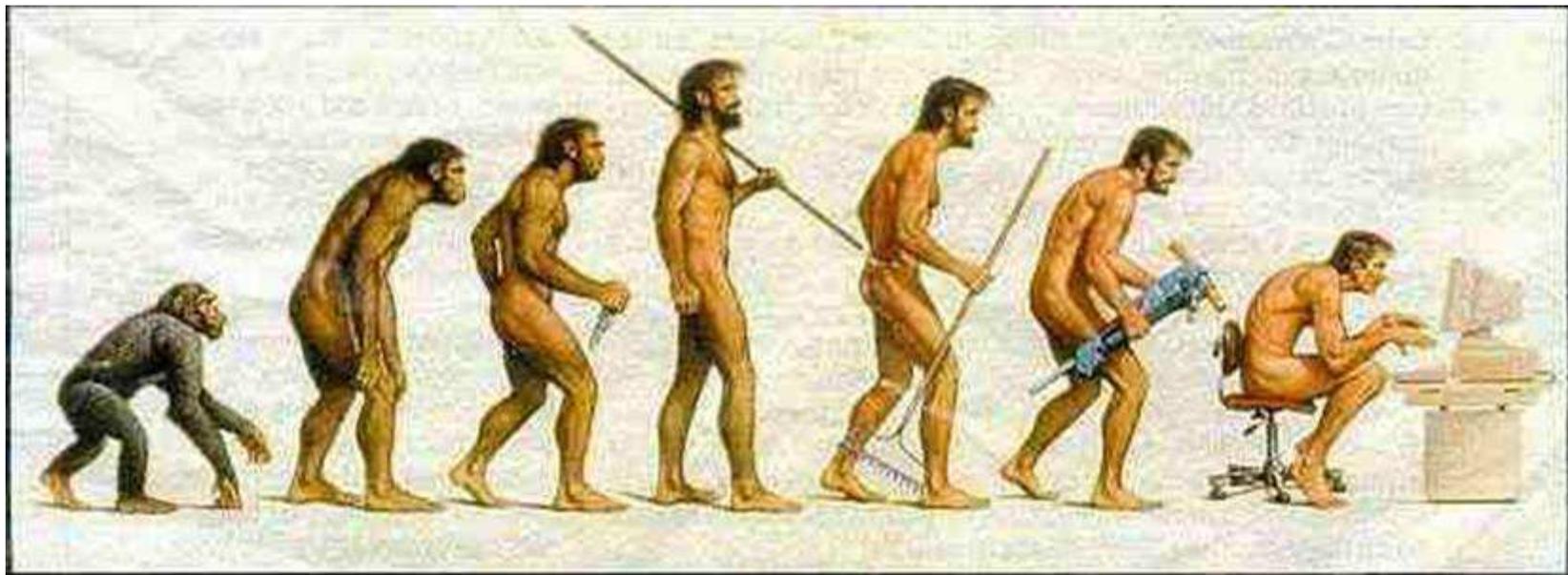
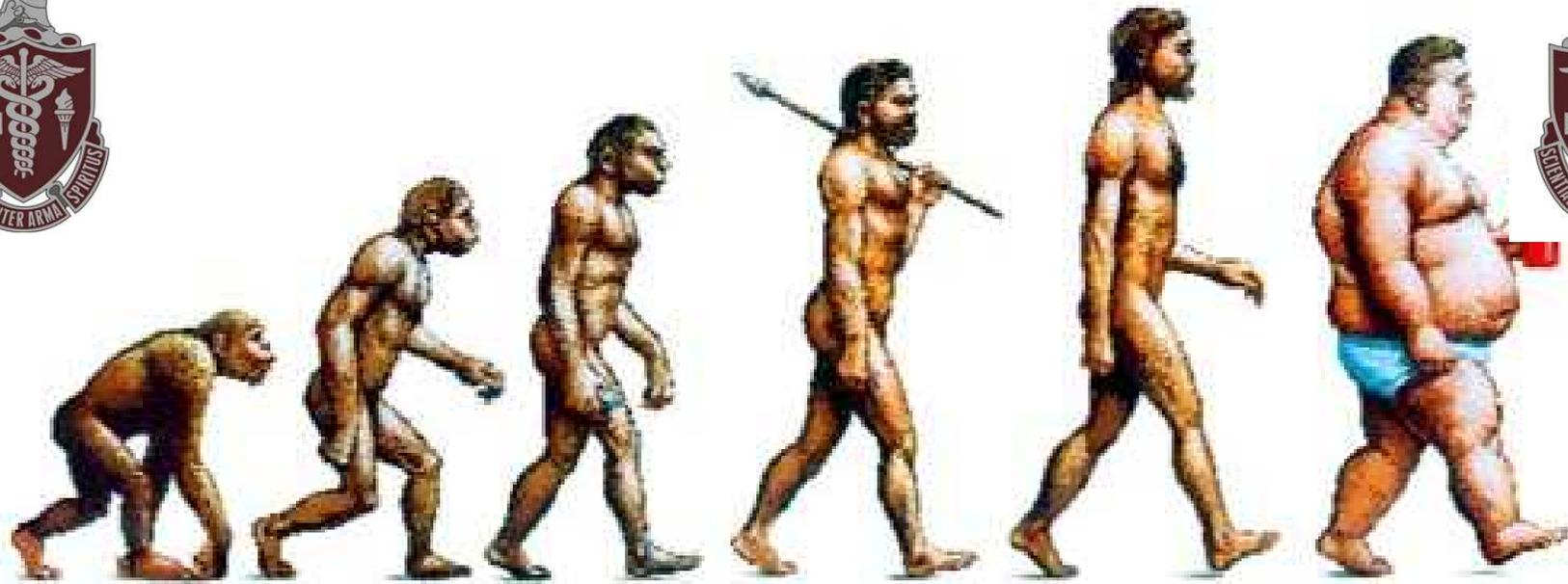


# **Surgical Weight Loss: Medical Considerations**

***CDR Henry Lin, MC, USN***

***LTC Scott Rehrig MD***

***Phyllis Gottlieb RN***









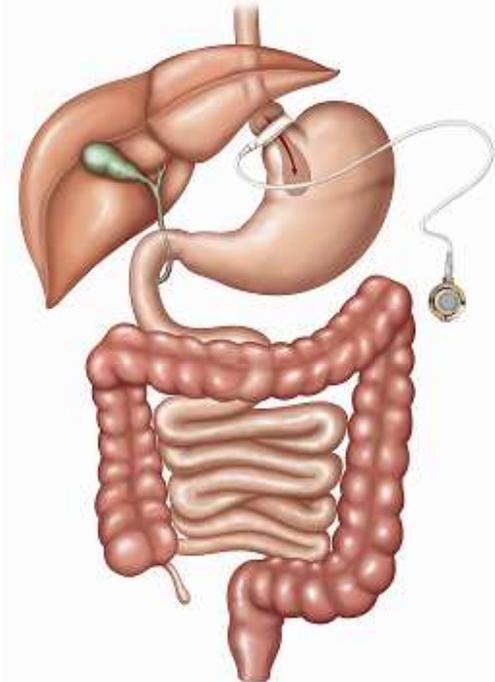
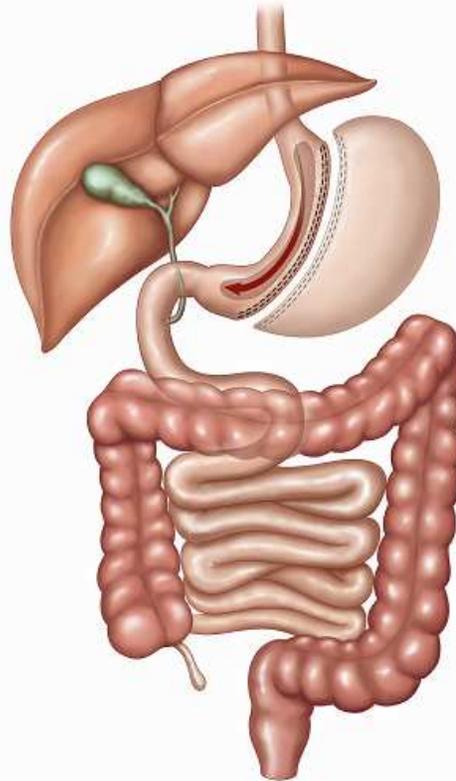
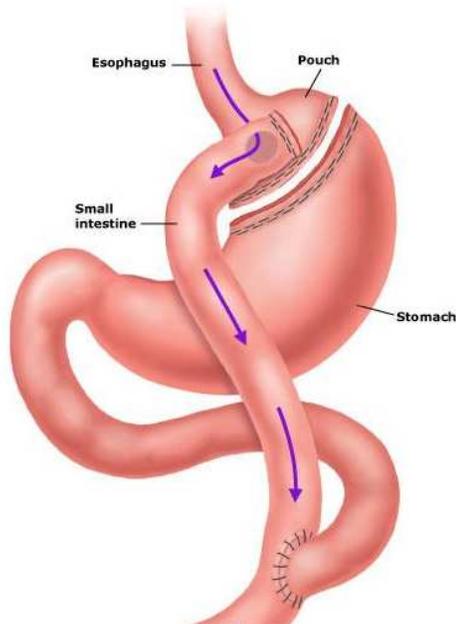
## Overview



- **Website**
- **Eligibility**
- **Pre-Requisites**
  - **Consults**
- **Types of Surgeries**
  - **Success Rates**
- **Contra-indications**
- **Pre-op Work-Up**
- **Post-Op Complications**

# 3 Surgical Options

Roux-en-Y gastric bypass (RYGB)

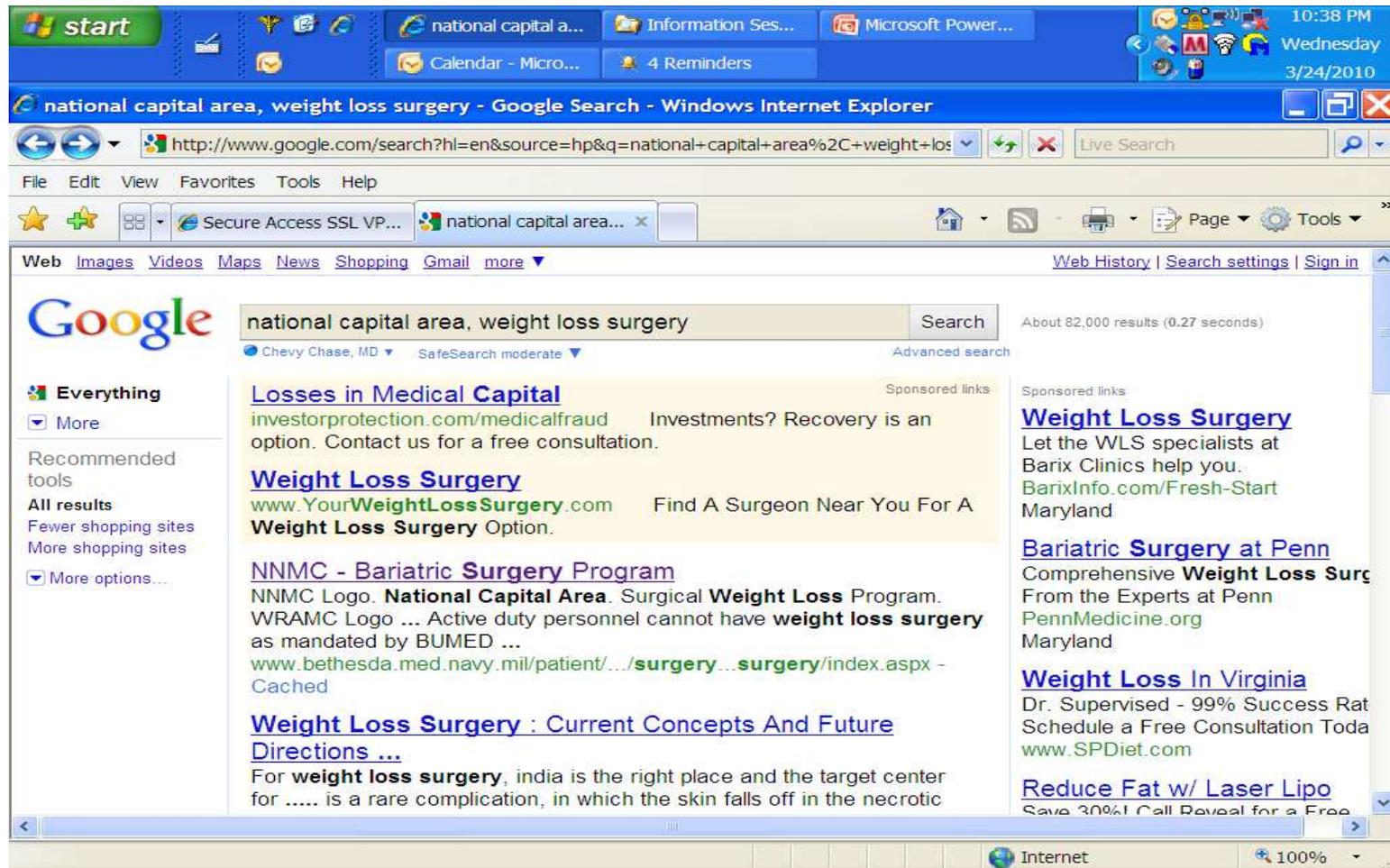


- RNY GBP
- EWL 2y 65-85%
- EWL 5y 65-85%

Sleeve  
40-80%  
40-80%

Band  
35-85%  
35-80%

# NCA Bariatric Surgery Website: PCM section



[http://www.bethesda.med.navy.mil/patient/health\\_care/surgery\\_services/bariatric\\_surgery/index.aspx](http://www.bethesda.med.navy.mil/patient/health_care/surgery_services/bariatric_surgery/index.aspx)



# Scope of Problem



- **Global epidemic**
  - 300,000 US deaths per yr
- **Economic impact**
  - \$ 117 billion yr in US
- **Negative Survival impact for BMI 45:**
  - White male 13yrs less
  - Black males 20yrs less
  - Black women 5yrs less
  - White women 8 yrs less



## II and Risk Levels



	<b>BMI</b>	<b>Risk of Comorbidity</b>
<b>Normal</b>	<b>18-24</b>	<b>Average</b>
<b>Overweight</b>	<b>25-29</b>	<b>Increased</b>
<b>Obesity class I</b>	<b>30-34</b>	<b>Moderate</b>
<b>Obesity class II</b> (morbid)	<b>35-39</b>	<b>Severe</b>
<b>Obesity class III</b> (severe morbid)	<b>40 +</b>	<b>Very Severe</b>



## Obesity Comorbidities



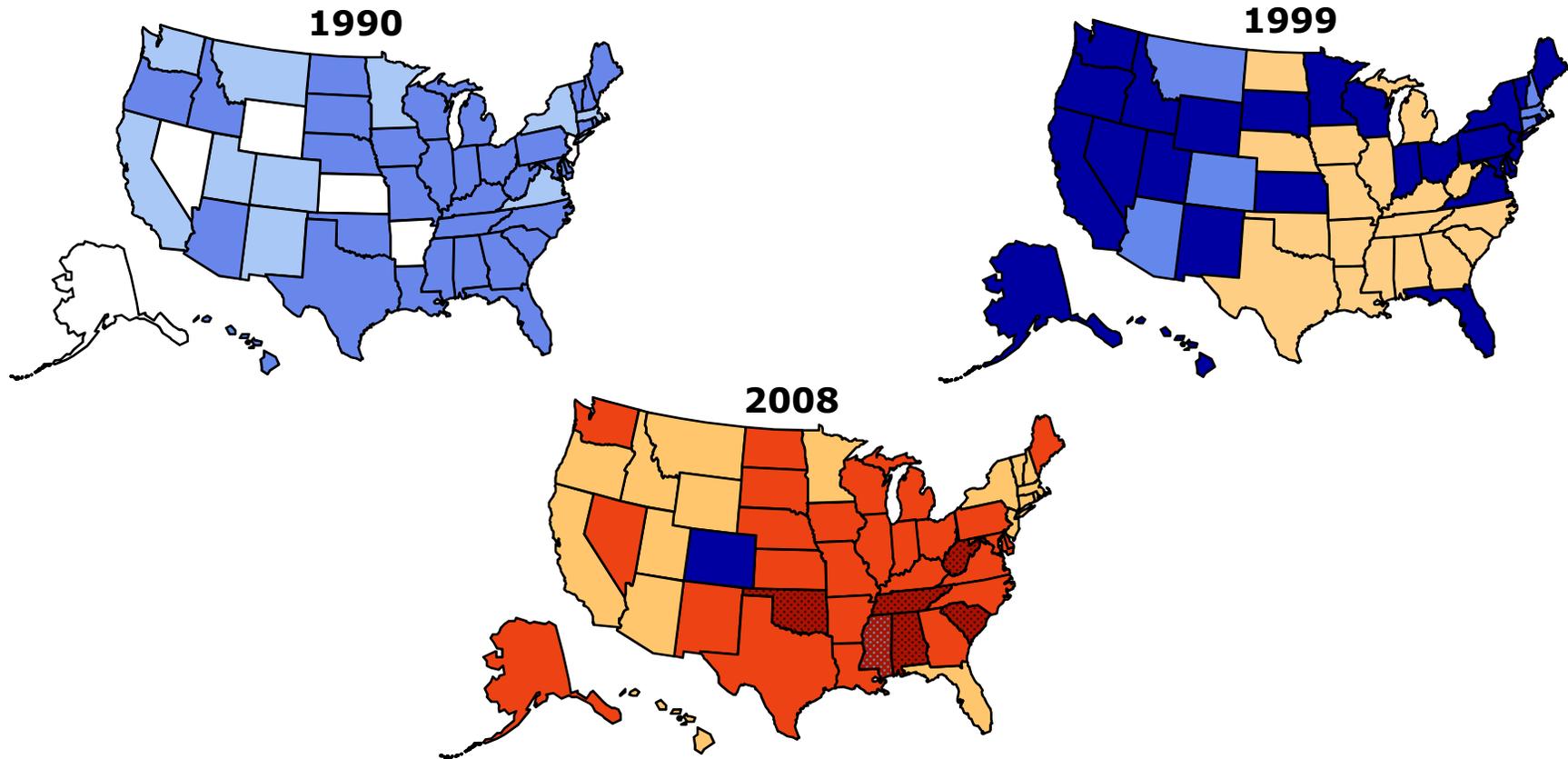
*“Once BMI values defining morbid obesity are reached, we are addressing a disease – a life-shortening, incapacitating, malignant disease”*

*Henry Buchwald MD PhD*

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1990, 1999, 2008

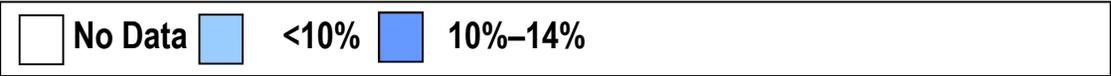
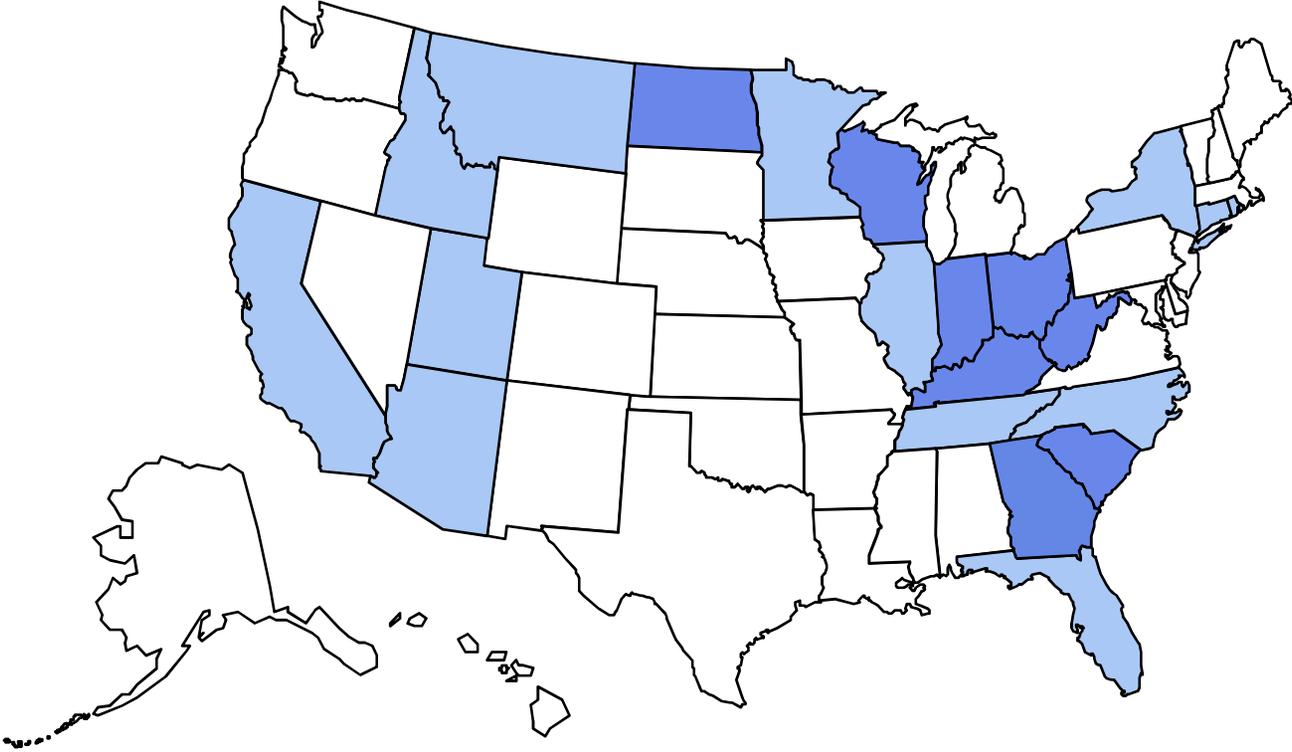
(\*BMI  $\geq 30$ , or about 30 lbs. overweight for 5'4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1985

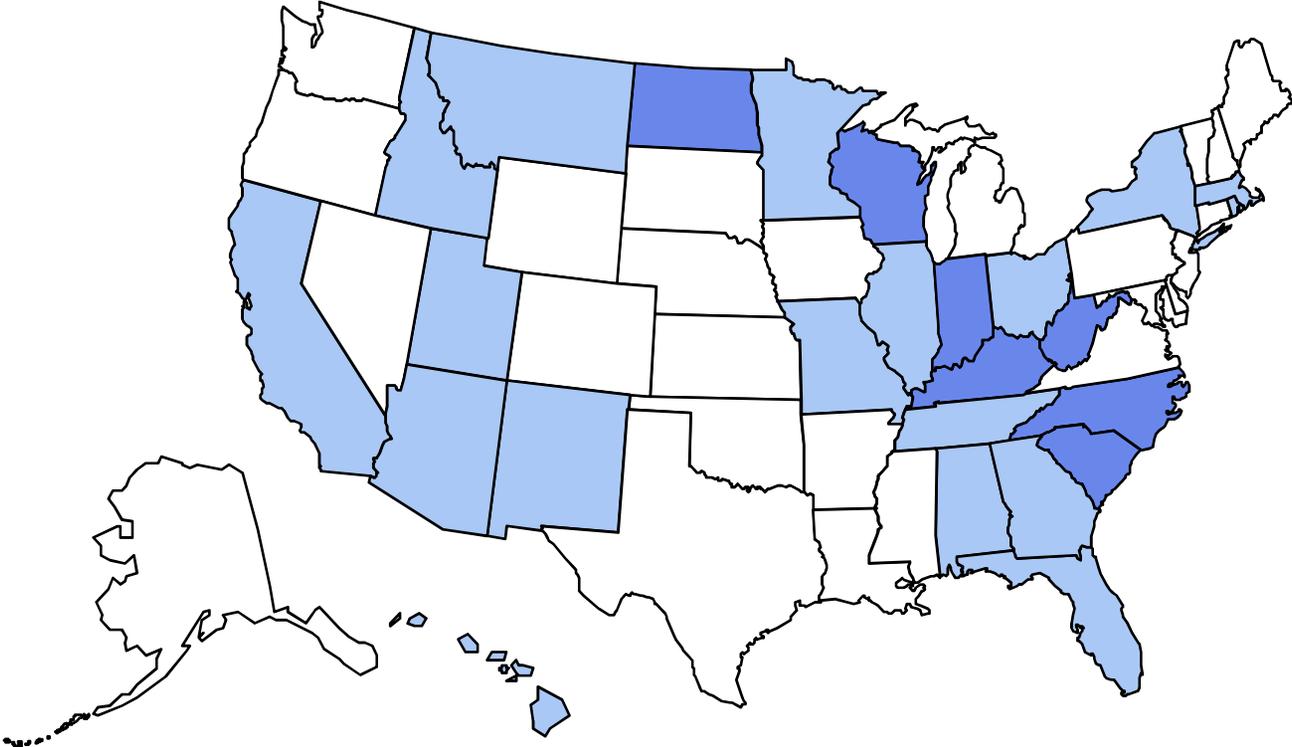
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1986

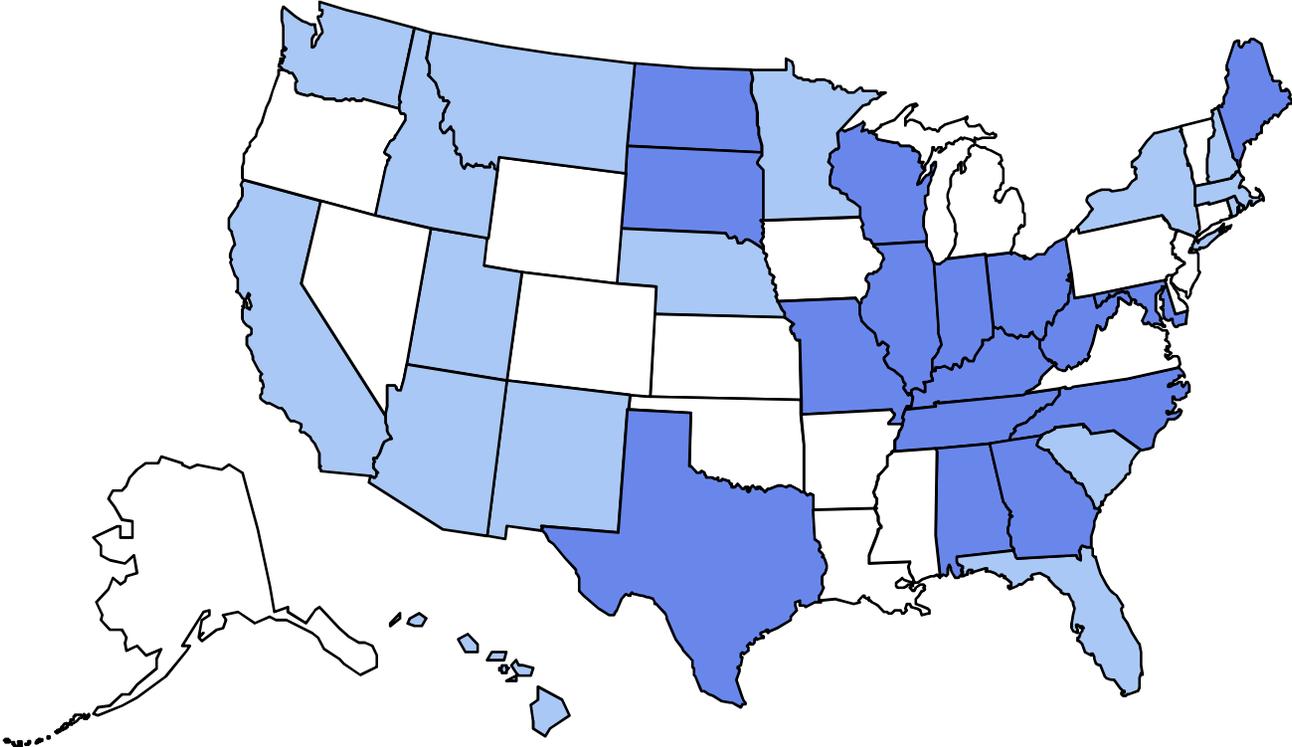
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# Obesity Trends\* Among U.S. Adults

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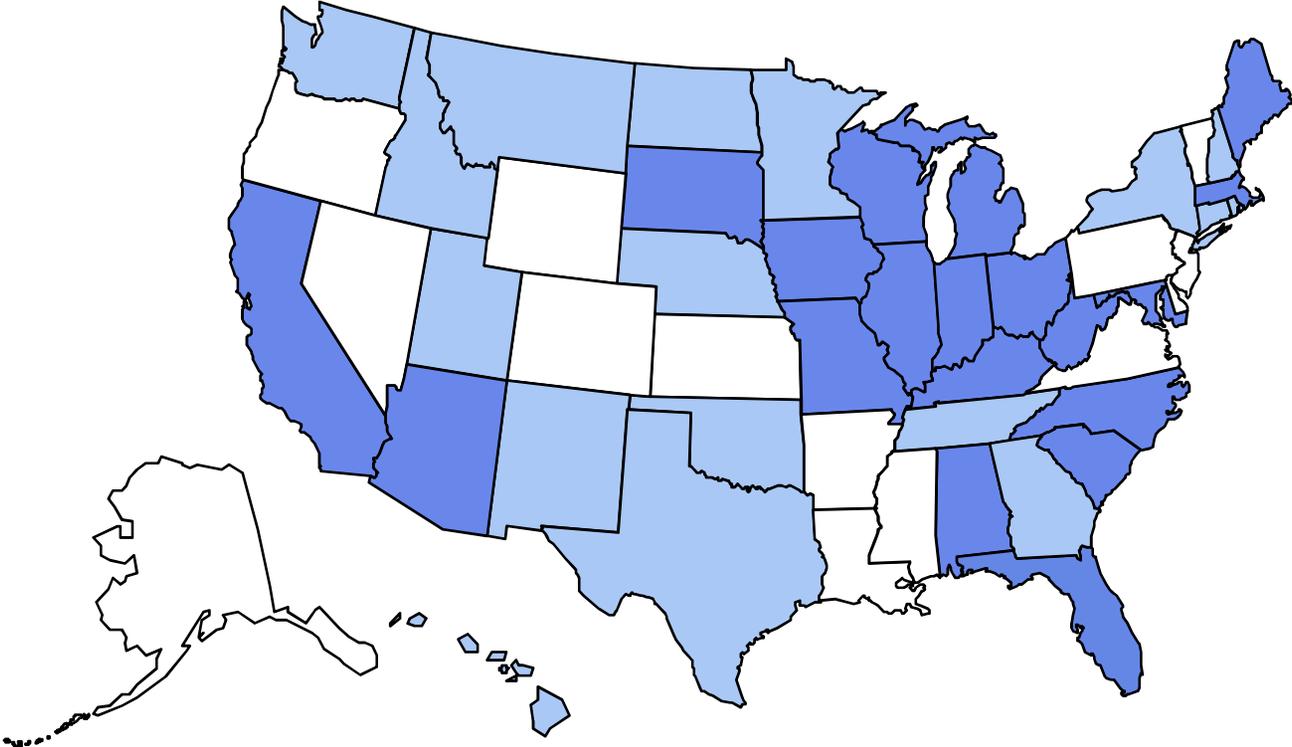
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# Obesity Trends\* Among U.S. Adults

## BRFSS, 1988

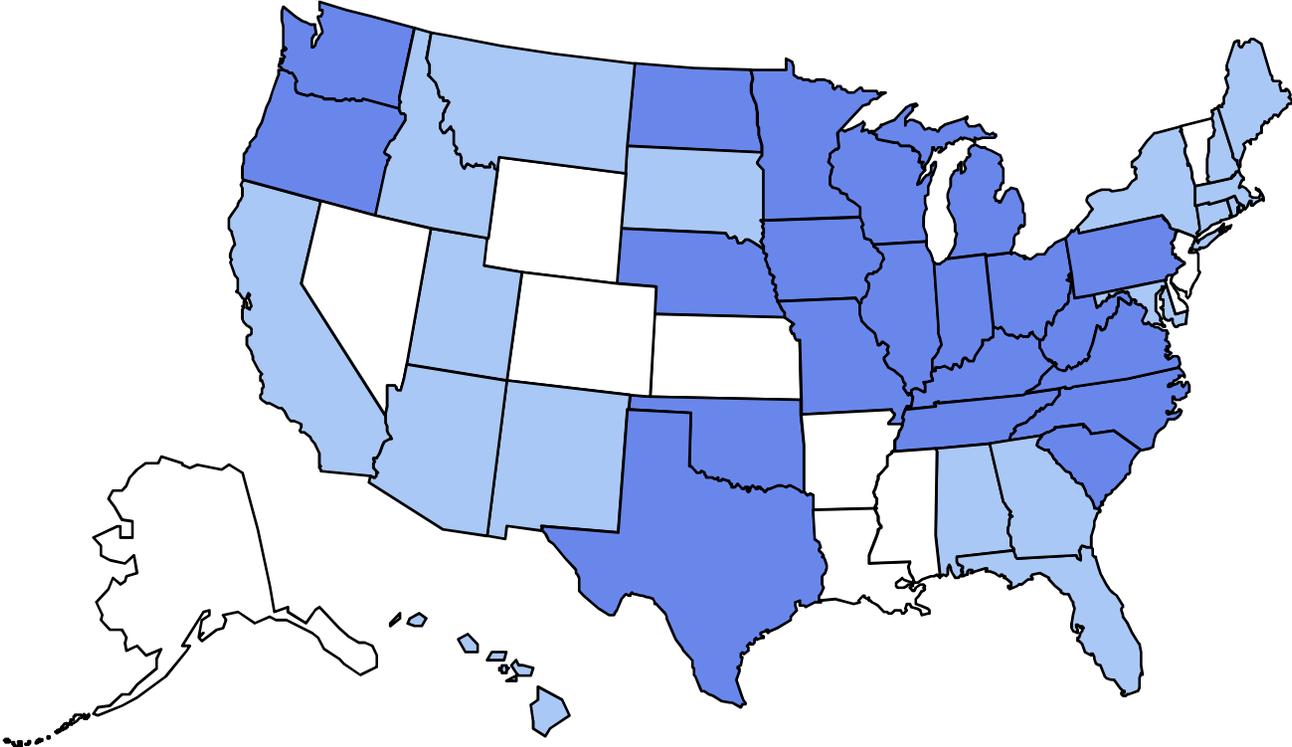
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1989

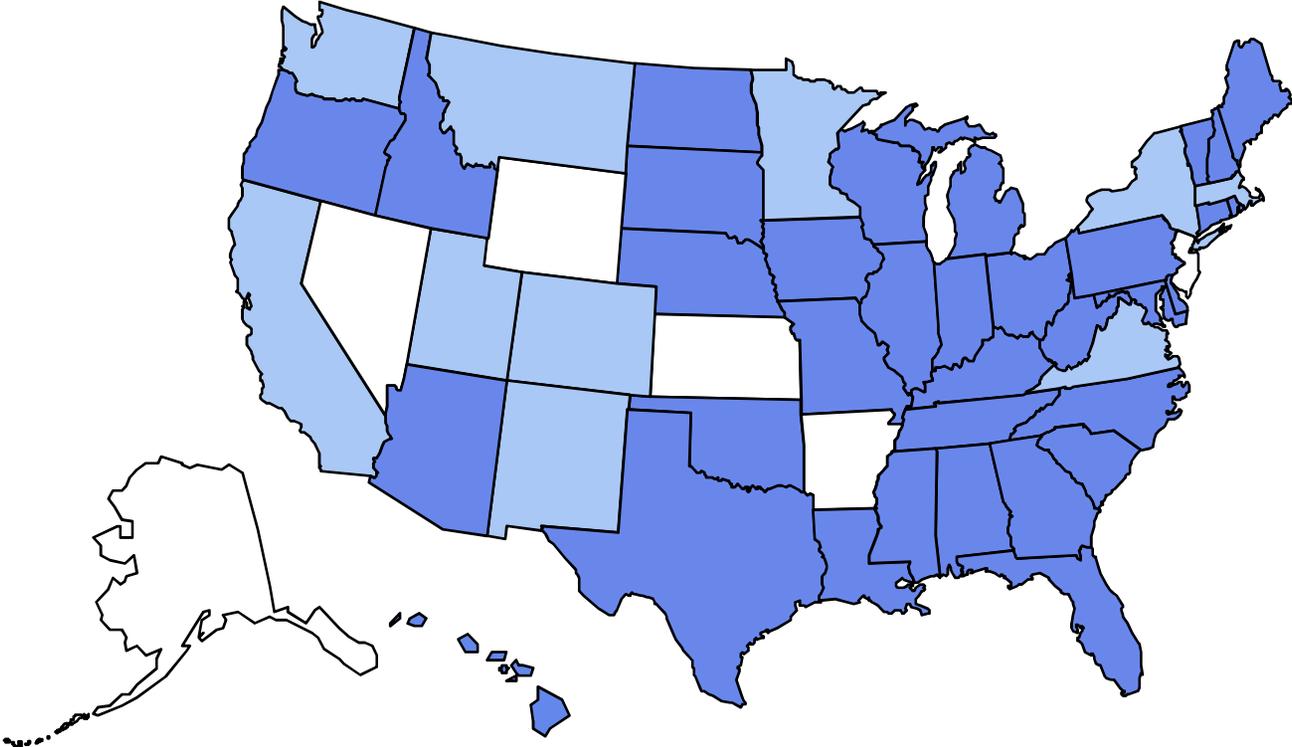
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1990

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

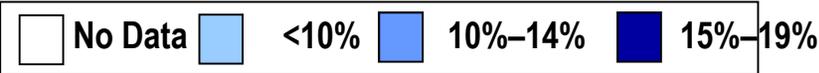
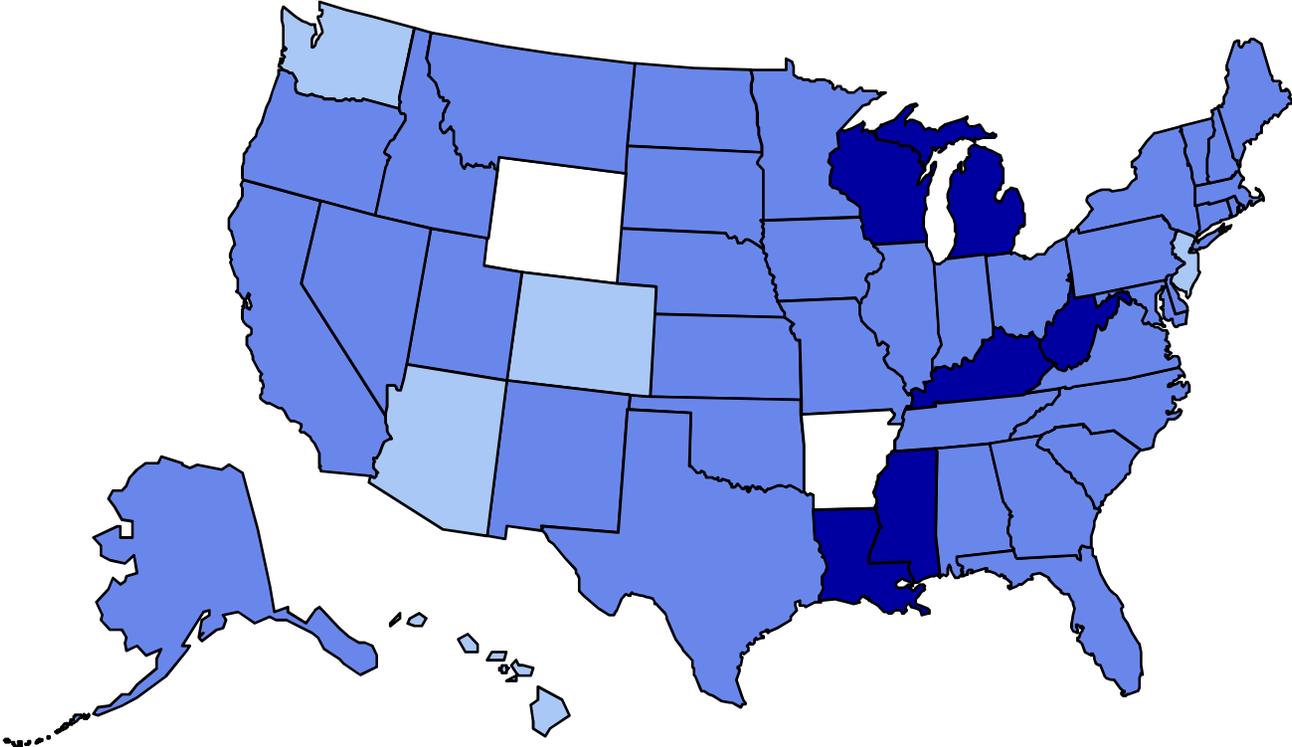




# Obesity Trends\* Among U.S. Adults

BRFSS, 1992

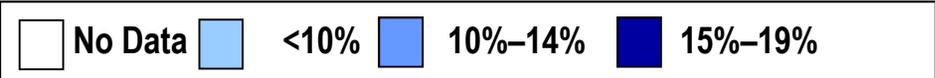
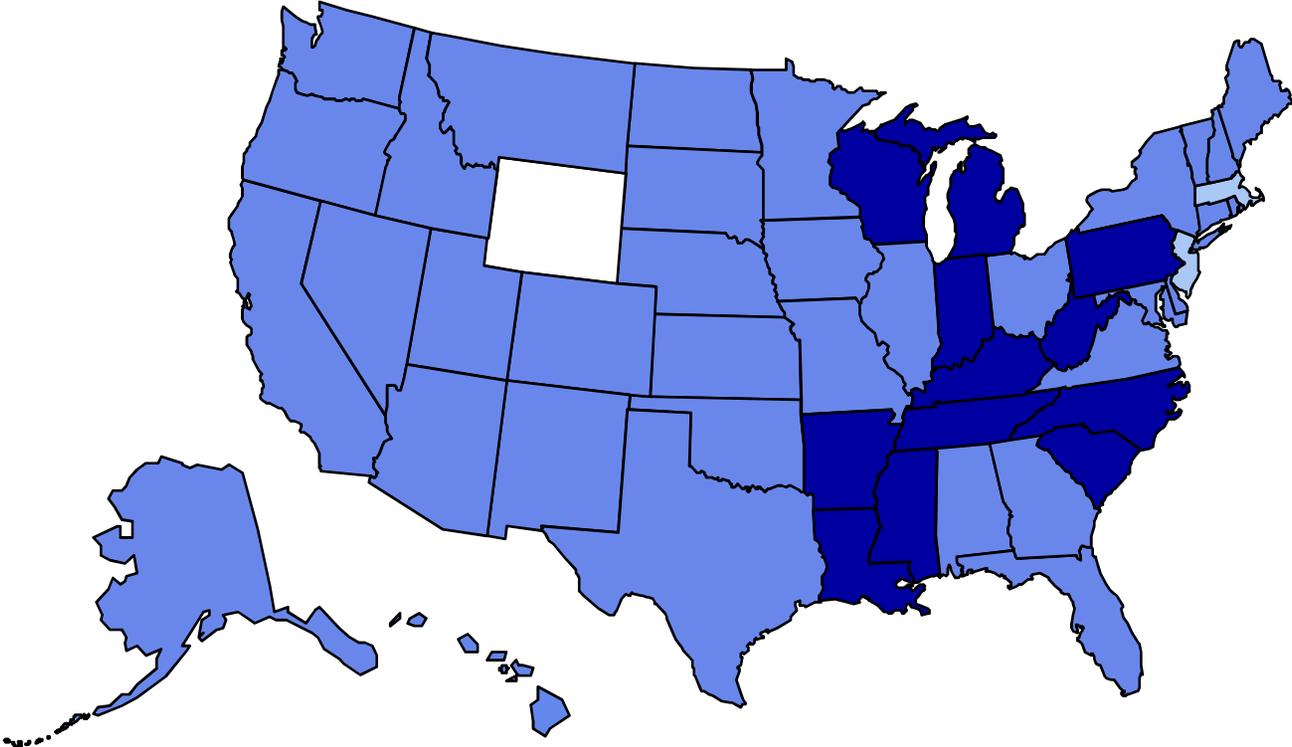
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

BRFSS, 1993

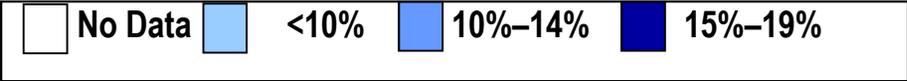
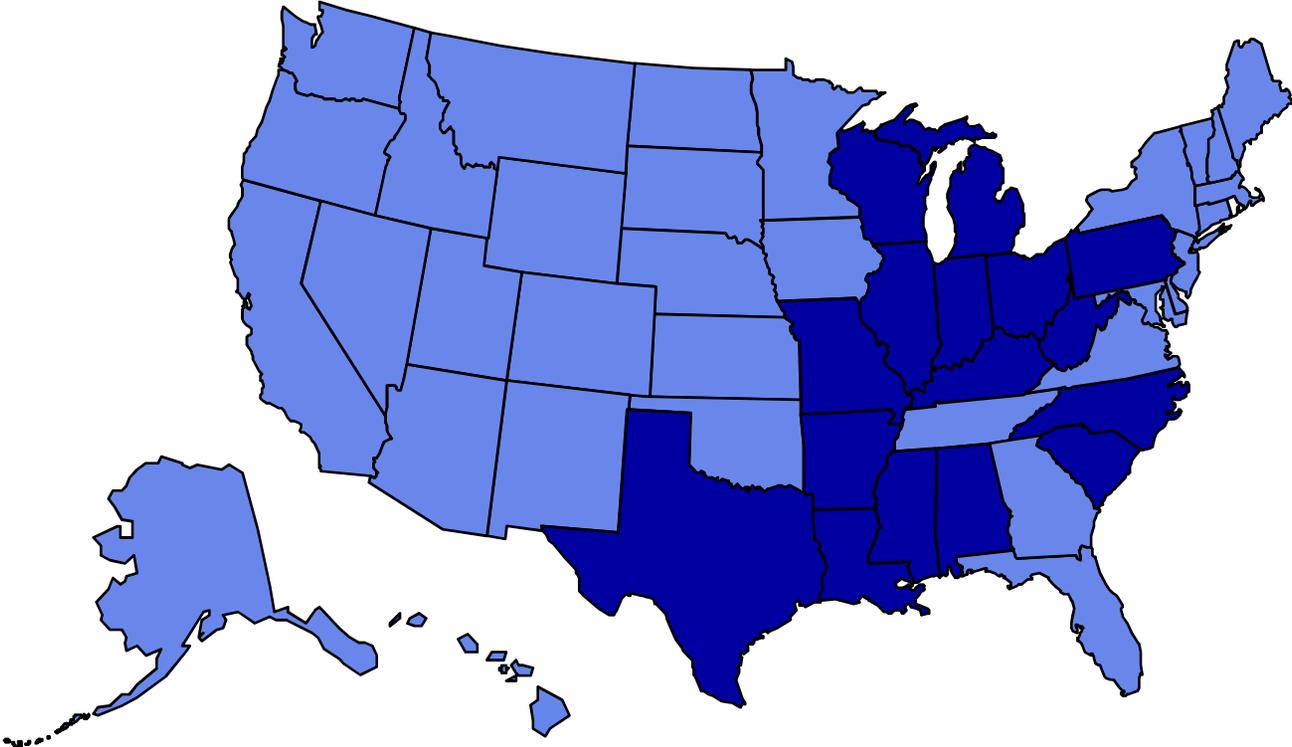
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

**BRFSS, 1994**

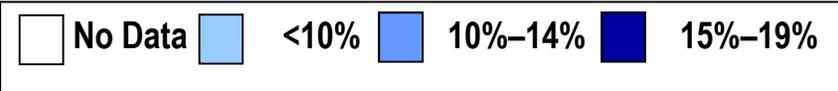
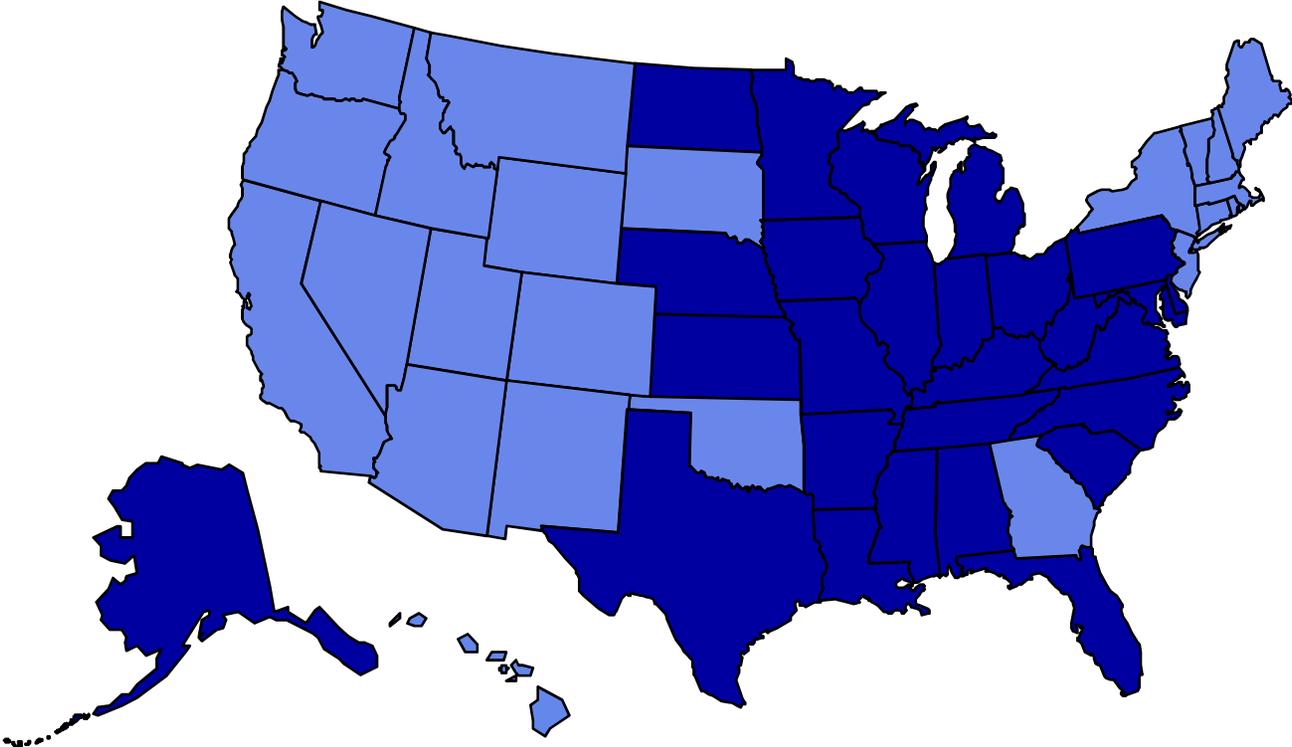
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1995

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

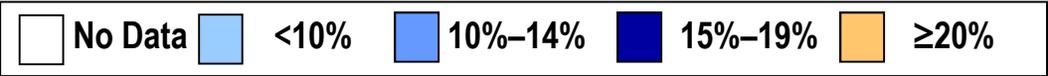
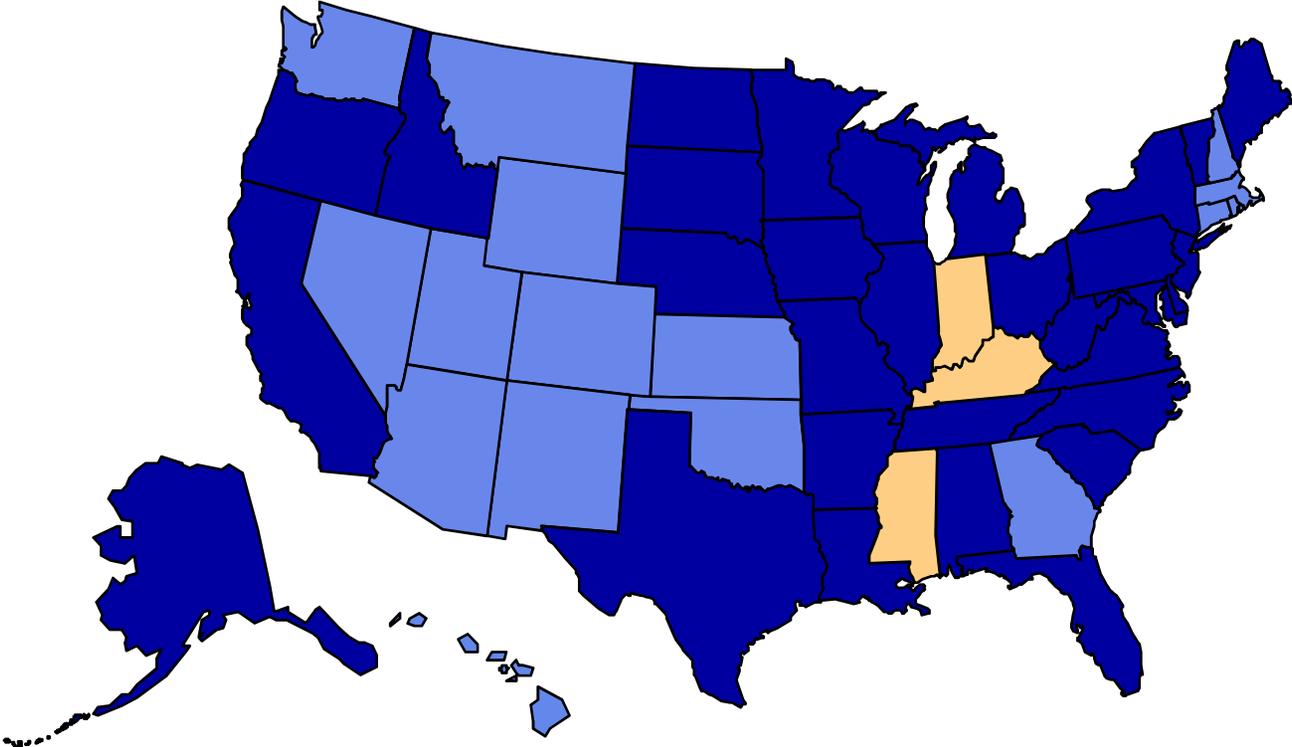




# Obesity Trends\* Among U.S. Adults

BRFSS, 1997

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

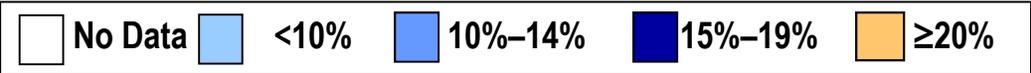
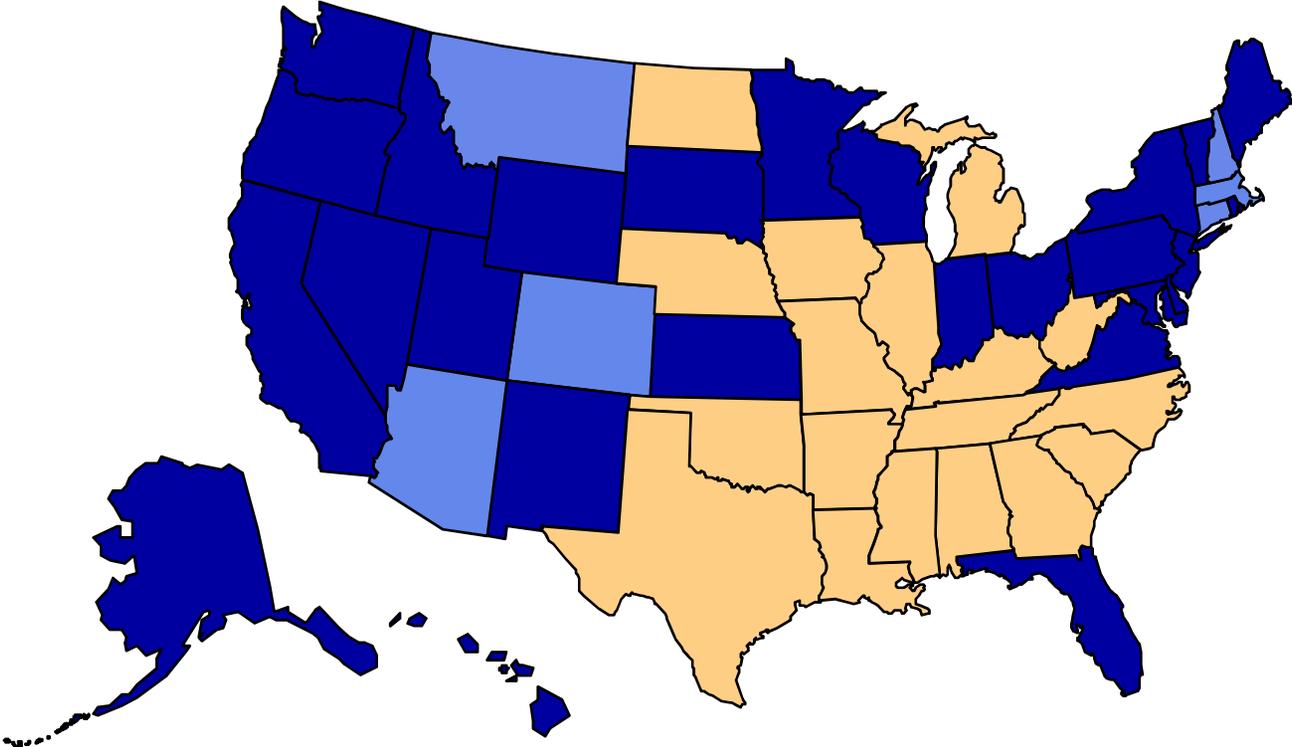




# Obesity Trends\* Among U.S. Adults

BRFSS, 1999

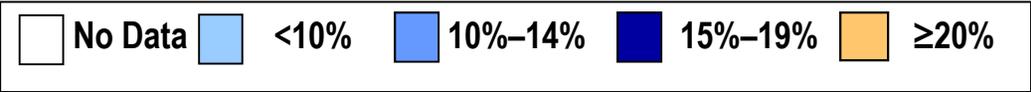
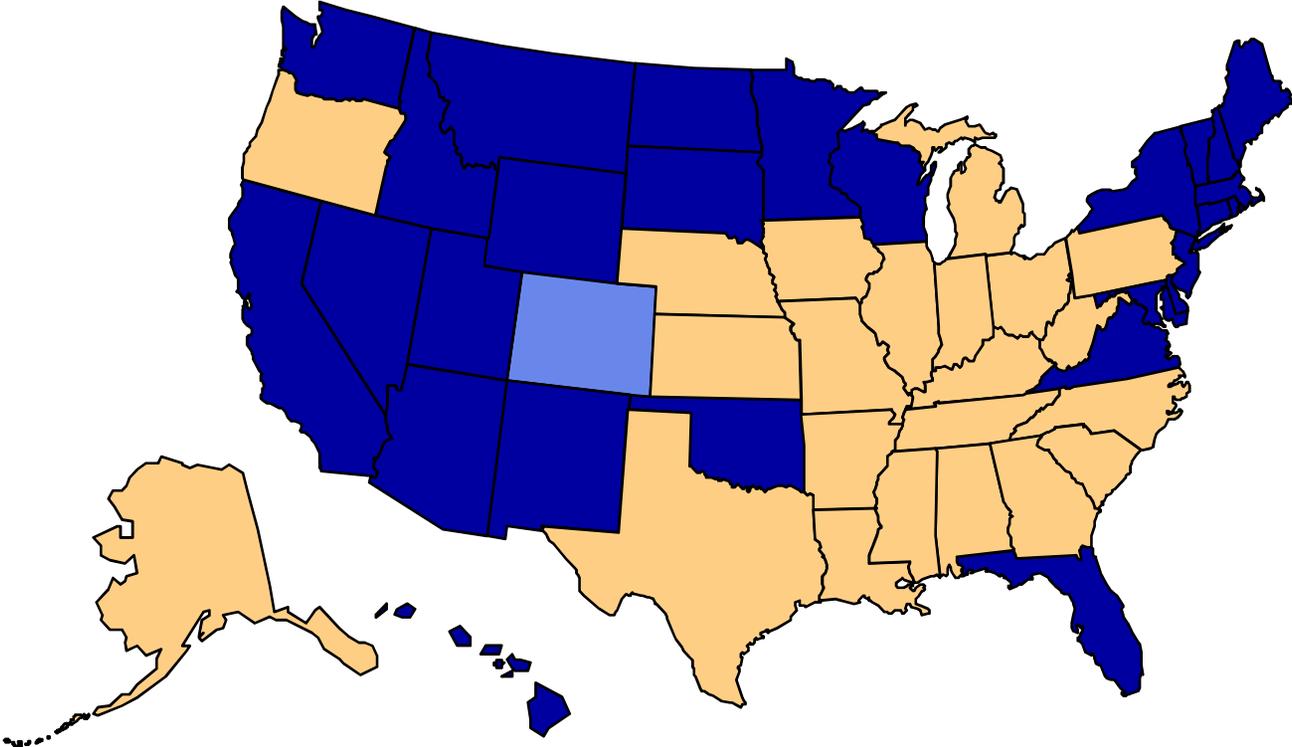
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2000

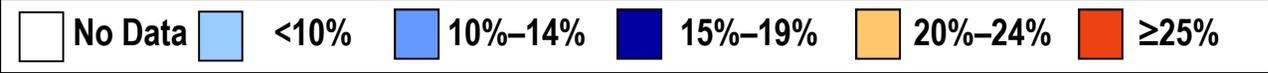
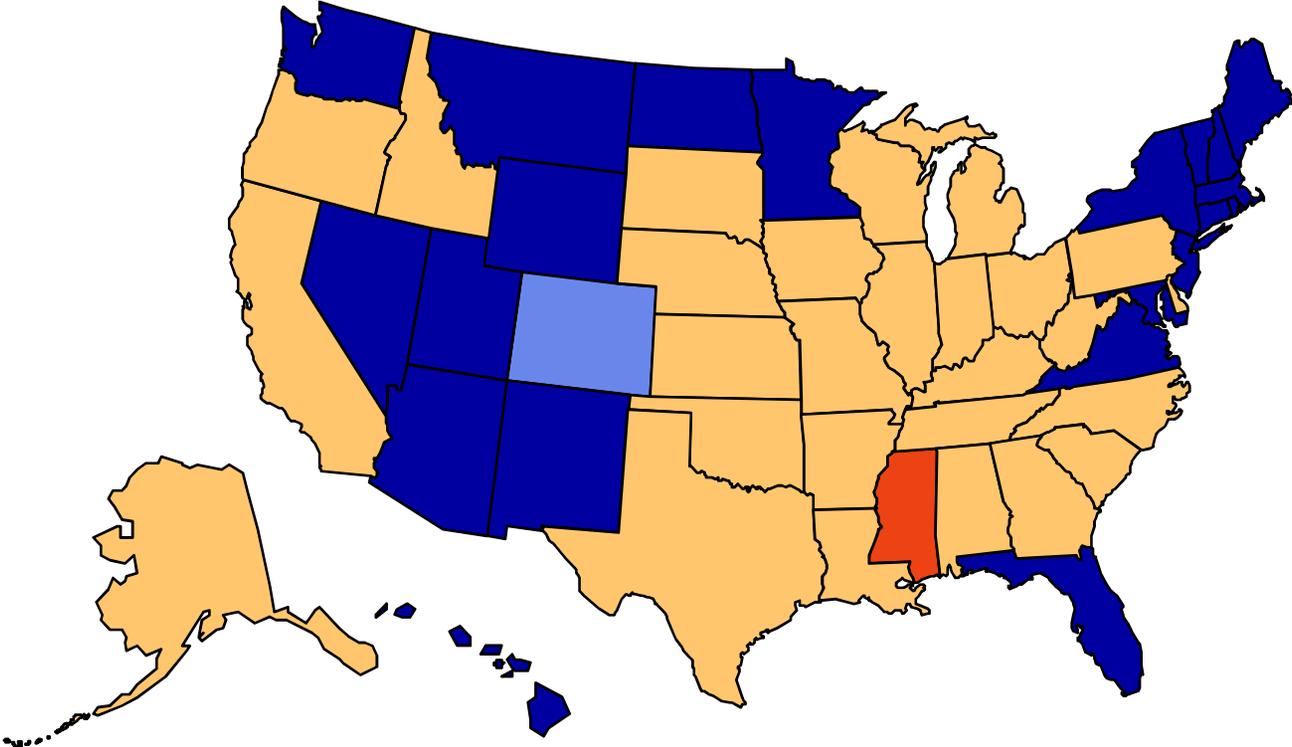
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2001

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)





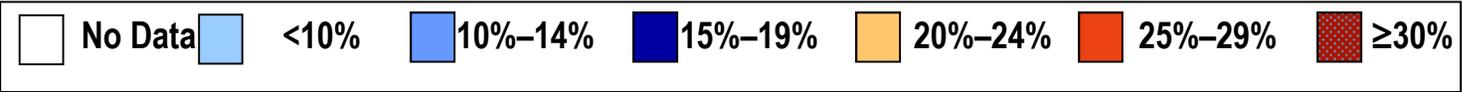
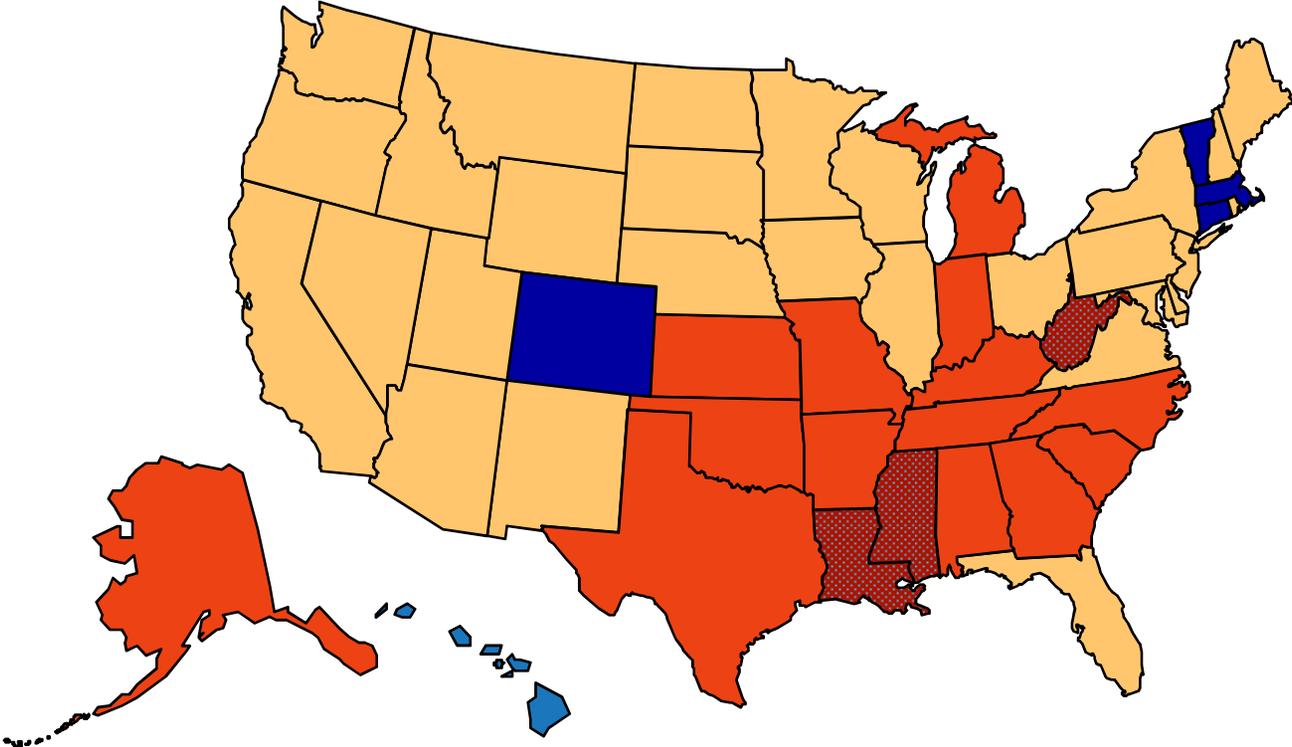




# Obesity Trends\* Among U.S. Adults

## BRFSS, 2005

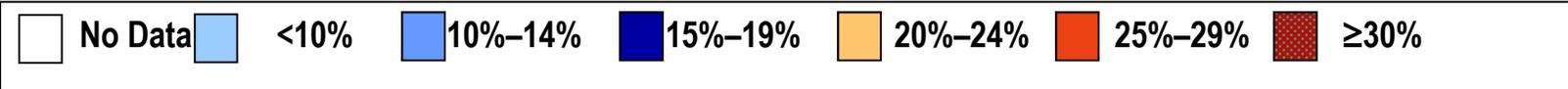
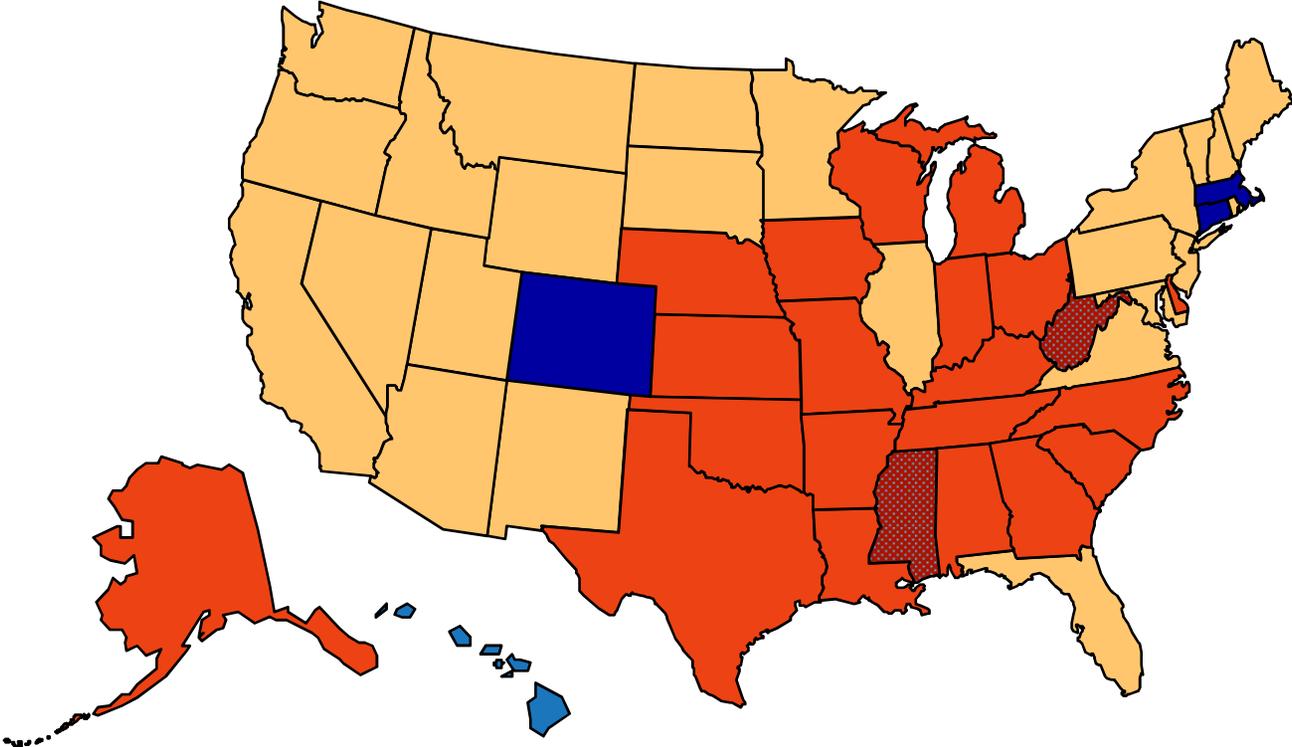
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2006

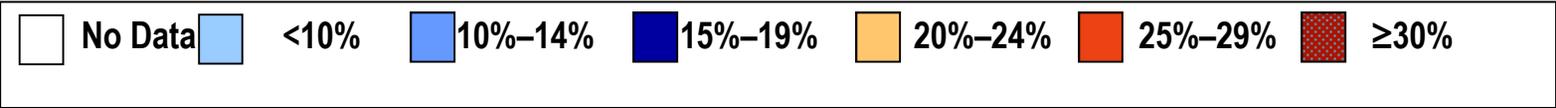
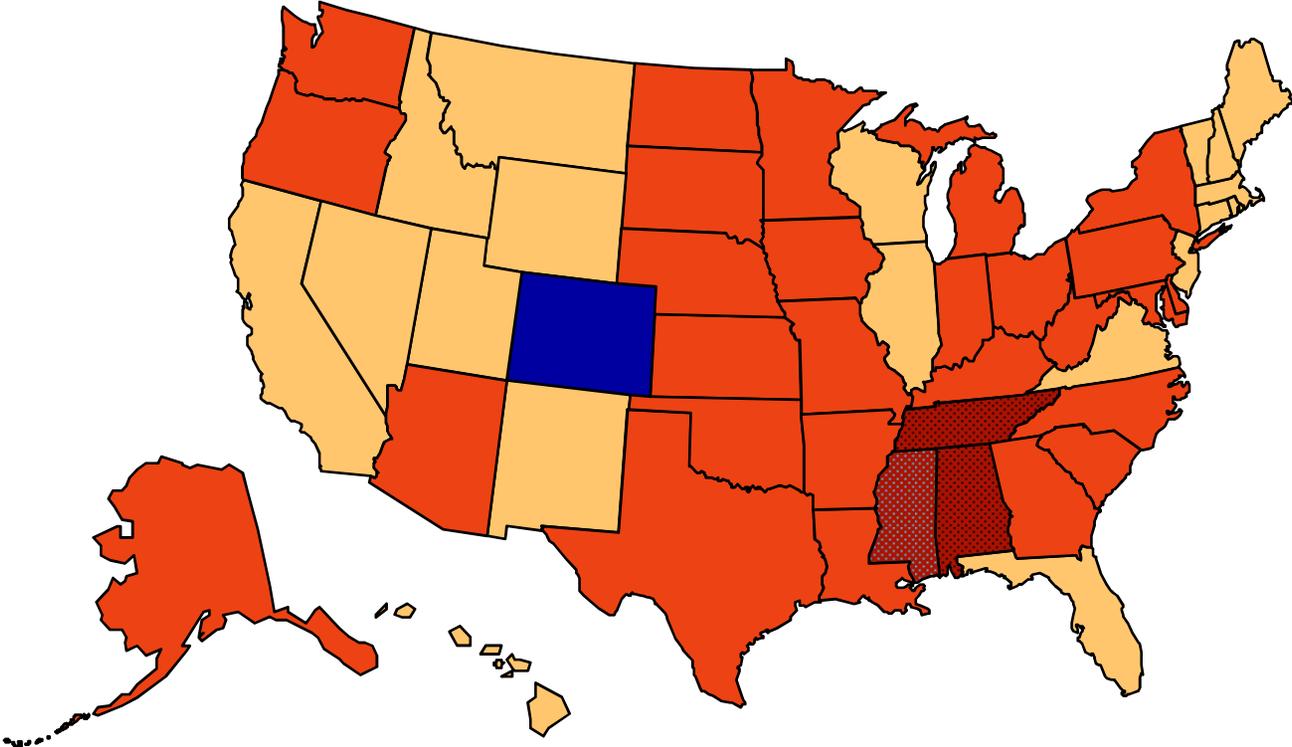
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2007

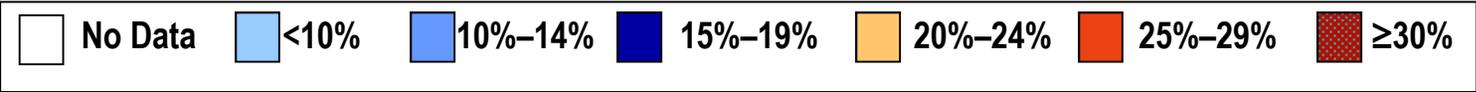
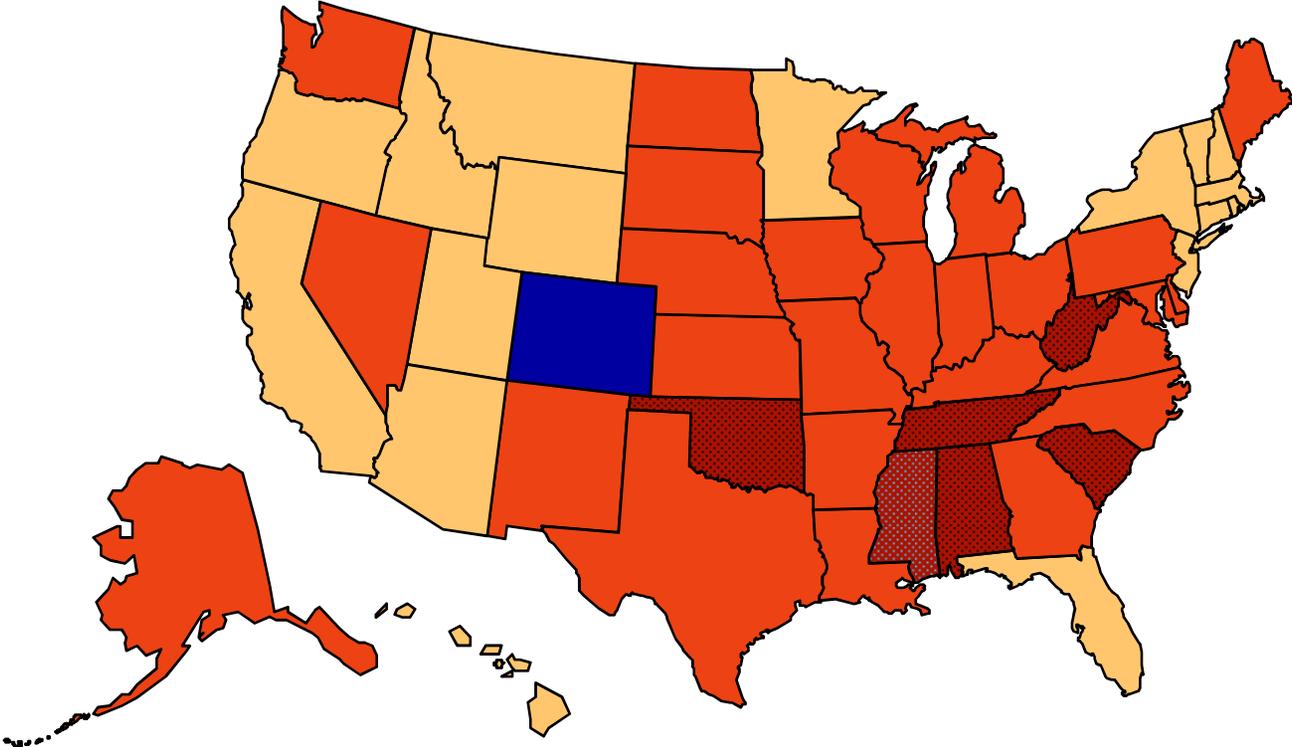
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



# Obesity Trends\* Among U.S. Adults

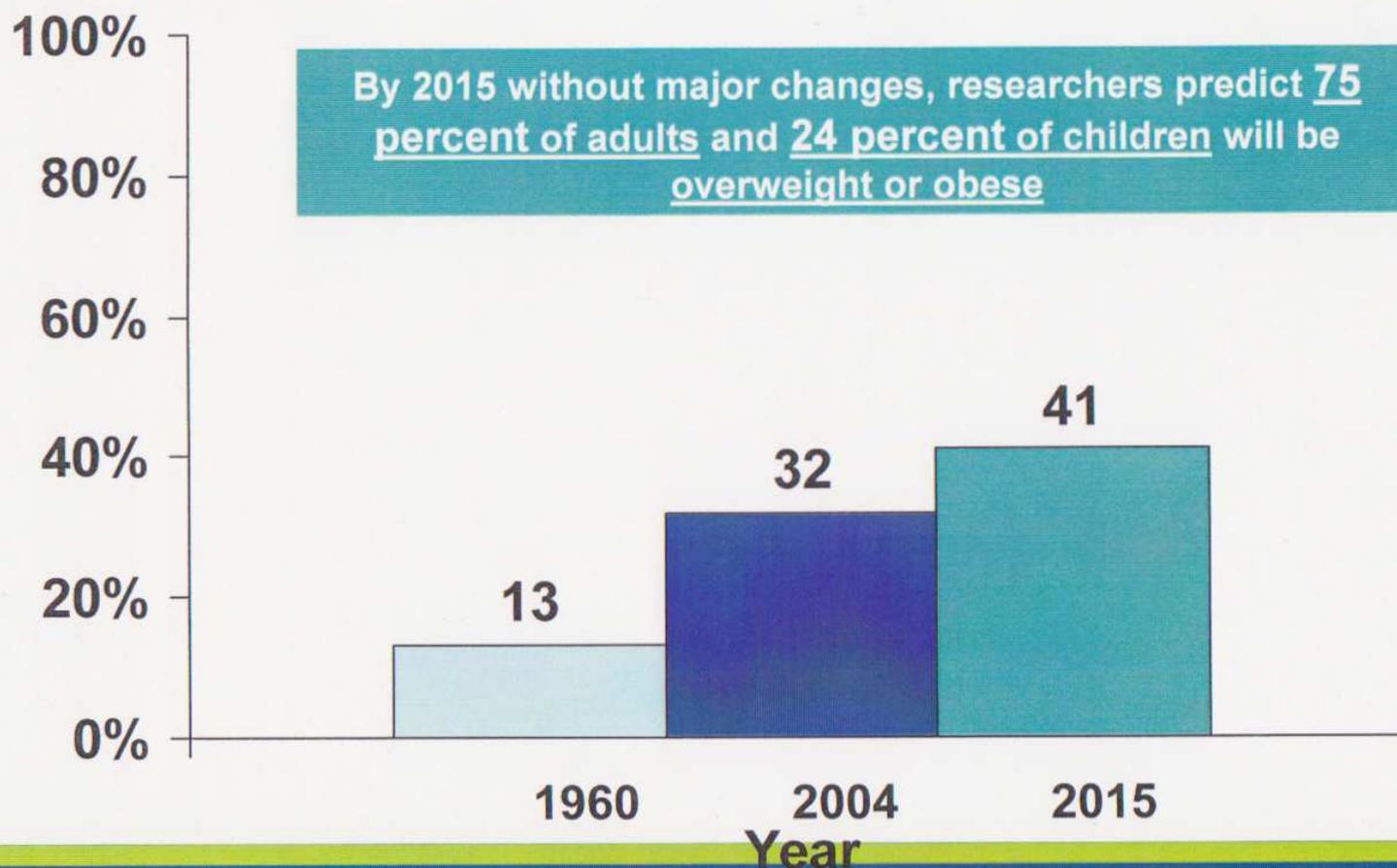
## BRFSS, 2008

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



## The rate of obesity is also expected to increase, and contribute to rising rates of chronic diseases

By 2015, it is predicted that 41 percent of Americans will be obese

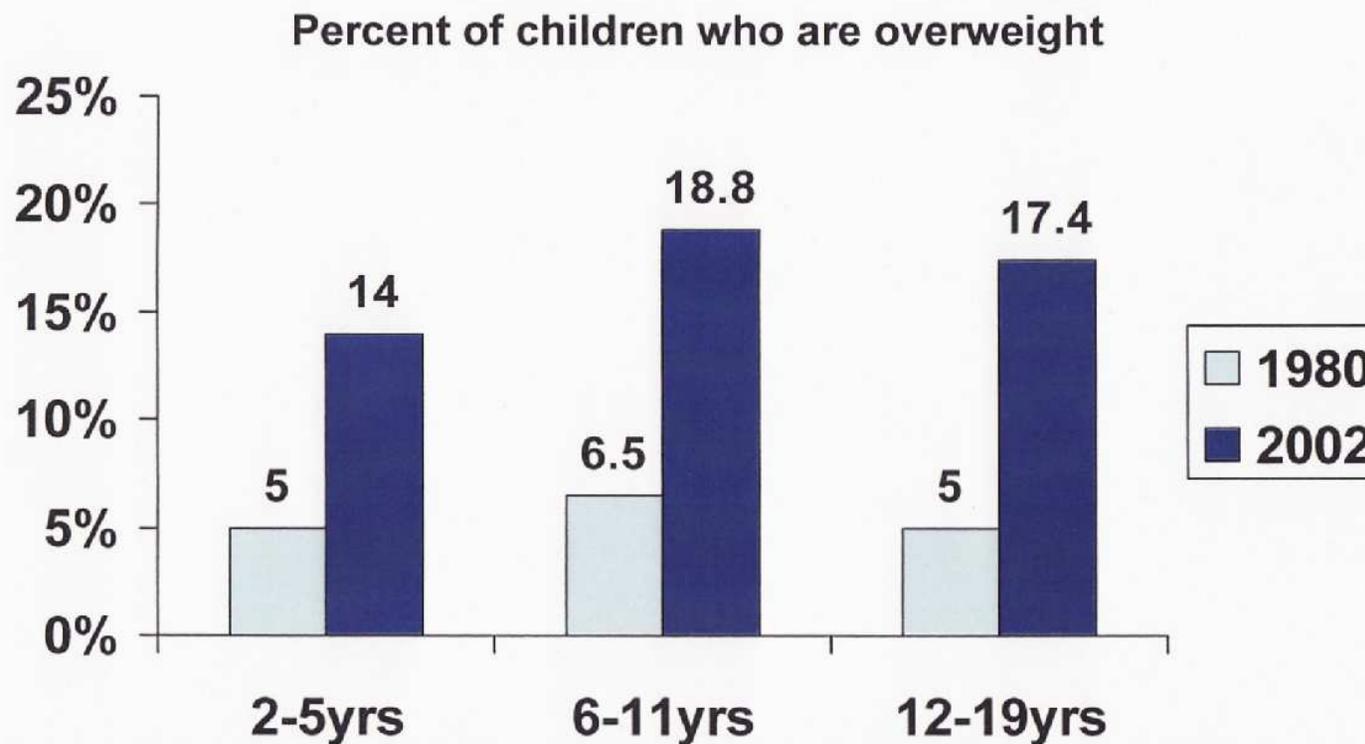


Source: Wang, Y and Beydoun, M. The Obesity Epidemic in the United States—Gender, Age, Socioeconomic, Racial/Ethnic, and Geographic Characteristics: A Systematic Review and Meta-Regression Analysis. *Epidemiologic Review*. 2007;29(1):6-28.  
doi:10.1093/epirev/nxn007

BON SECOURS RICHMOND FOUNDATION



## The share of children who are overweight has more than doubled in the U.S. over the past two decades



# Treatment Options for Obesity

Diet and Exercise alone: 10% success in permanent weight loss

- **MEDICAL** :

- **0-10 kg**
- Medications
  - **LIFE-LONG**
- Diabetes mellitus is
  - **NOT** resolved

- **SURGICAL**:

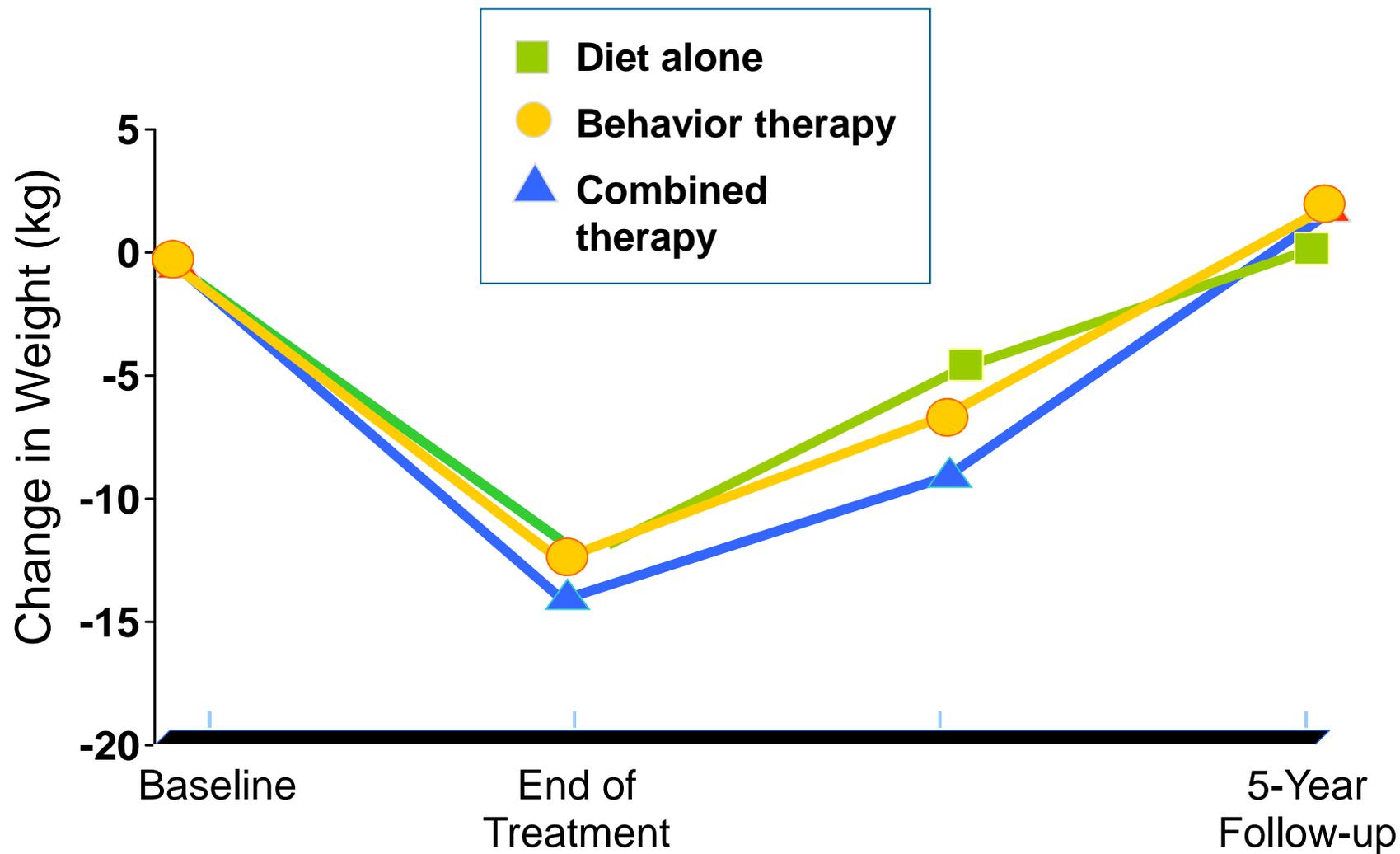
- **20-45 kg**
- Medications
  - **DISCONTINUED**
  - or dosages decreased
- Diabetes mellitus is
  - **RESOLVED**
    - **50-85%**

# Obesity Treatment Guide

	BMI Category (kg/m <sup>2</sup> )				
Treatment	25-26.9	27-29.9	30-34.9	35-39.9	≥40
Diet, Exercise, Behavior Tx	With comorbidities	With comorbidities	+	+	+
Pharmacotherapy		With comorbidities	+	+	+
Surgery				With comorbidities	With comorbidities

Source: *The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. National Institutes of Health. National Heart, Lung, and Blood Institute. October 2000, NIH Publication No. 00-4084.

# Short-term Obesity Therapy Does Not Result in Long-term Weight Loss



Source: Wadden TA, Sternberg JA, Letizia KA, et al. Treatment of obesity by very low calorie diet, behavior therapy, and their combination: a five-year perspective. *Int J Obes.* 1989;13 Suppl 2:39-46

# Pharmacotherapy

## FDA-approved weight-loss drugs

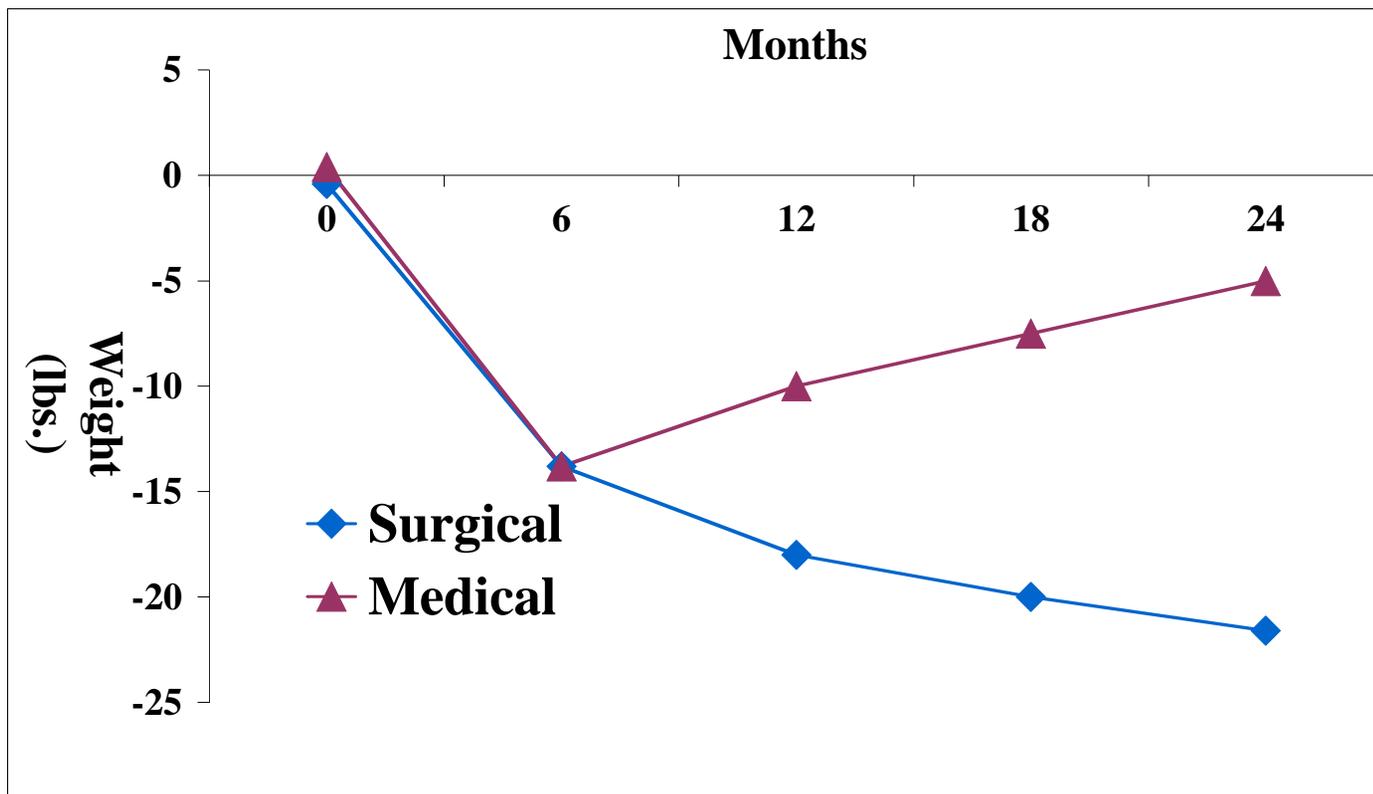
- Indicated for patients with BMI  $\geq 30$  or BMI  $\geq 27$  with other risk factors (eg, hypertension)<sup>1,2</sup>
- Two categories:
  - “Fat blocker,” eg, **orlistat** (**Xenical**<sup>®</sup>)<sup>1</sup>
    - Inhibit intestinal enzyme that metabolizes fat
    - *Some* fat passes undigested through bowels
  - Appetite suppressants, eg, **sibutramine** (**Meridia**<sup>®</sup>)<sup>2</sup>
    - Act on hunger control centers in the brain
    - Decrease appetite by inhibiting reuptake of serotonin, norepinephrine, and dopamine

Sources: 1. Roche Laboratories. Xenical (orlistat) Capsules Prescribing Information. 2007. 2. Abbott Laboratories. Meridia (sibutramine hydrochloride monohydrate) Capsules. 2006.

CPCPBROCH.pdf (SECURED) - Adobe Reader			
File Edit View Document Tools Window Help			
12 / 16 140% Find			
Sibutramine*†	Appetite suppressant: combined norepinephrine and serotonin reuptake inhibitor	Modest increases in heart rate and blood pressure, nervousness, insomnia	Diet was a co- 18% of studies The pooled m patients was 2. 12 months.
Phentermine*†	Appetite suppressant: sympathomimetic amine	Cardiovascular, gastrointestinal	<b>PHENTERMINI</b> A recent meta- Phentermine f The authors co in addition to statistically sig pooled mean v
Diethylpropion	Appetite suppressant: sympathomimetic amine	Palpitations, tachycardia, insomnia, gastrointestinal	<b>DIETHYLPROP</b> A recent meta- of Diethyl-pro individuals. Th Diethylpropio authors conclu combination v associated with
Orlistat*	Lipase inhibitor decreased absorption of fat	Diarrhea, flatulence, bloating, abdominal pain, dyspepsia	
Bupropion	Appetite suppressant: mechanism unknown	Paresthesia, insomnia, central nervous system effects	
Fluoxetine	Appetite suppressant: selective serotonin reuptake inhibitor	Agitation, nervousness, gastrointestinal	
Sertraline	Appetite suppressant selective serotonin reuptake inhibitor	Agitation, nervousness, gastrointestinal	
Topiramate	Mechanism unknown	Paresthesia, changes in taste	
Zonisamide	Mechanism unknown	Somnolence, dizziness,	

# Medical vs Surgical Therapy for Obesity

## Medical (lifestyle changes and pharmacotherapy) vs Surgical Therapy for Obesity



Source: O'Brien PE, Dixon JB, Laurie C, et al. Treatment of mild to moderate obesity with laparoscopic adjustable gastric banding or an intensive medical program. *Ann Intern Med.* 2006;144:625-633.

# Why Current FDA-Approved Weight-Loss Drugs Don't Work

- May not sustain long-term weight loss in most patients<sup>1,2,4</sup>
  - Only 2 obesity drugs are approved for long-term weight loss; efficacy beyond 2 and 4 years is unknown as clinical trials are limited
- Minority of patients lose 5 –10% of their weight<sup>1,3</sup>
- Hunger is not the only trigger for eating
  - Powerful forces drive eating
  - Our culture doesn't just use food for nutritional reasons
  - People eat for comfort
  - Behavior restructuring therapy may be useful in combination
  - Genetics and faulty metabolism

Sources: 1. Abbott Laboratories. Prescribing Information. *Meridia Capsules*; 2006. 2. Ioannides-Demos LL, Prioretto J, McNeill JJ. Pharmacotherapy for obesity. *Drugs*. 2005;65(10):1391-418. 3. Roche Laboratories I. Prescribing Information. *Xenical Capsules*; 2007. 4. Li Z, Maglione M, Tu W, et al. Meta-analysis: pharmacologic treatment of obesity. *Ann Intern Med*. 2005 Apr 5;142(7):532-546

# Limitations of Prescription Weight-Loss Drugs

- Side Effects
  - With Orlistat, a “fat blocker,” over 20% of patients had one or more of the following side effects: flatulence with fecal discharge, fecal urgency, or fatty, oily stools<sup>1</sup>
  - Sibutramine, an amphetamine-like drug, can cause psychological dependence and may interact with many other medications, including certain antibiotics, pain relievers, and antidepressants<sup>2</sup>
- Still...benefits may outweigh risks

Sources: 1. Roche Laboratories. Xenical (orlistat) Capsules Prescribing Information. 2007. 2. Abbott Laboratories. Meridia (sibutramine hydrochloride monohydrate) Capsules. 2006.



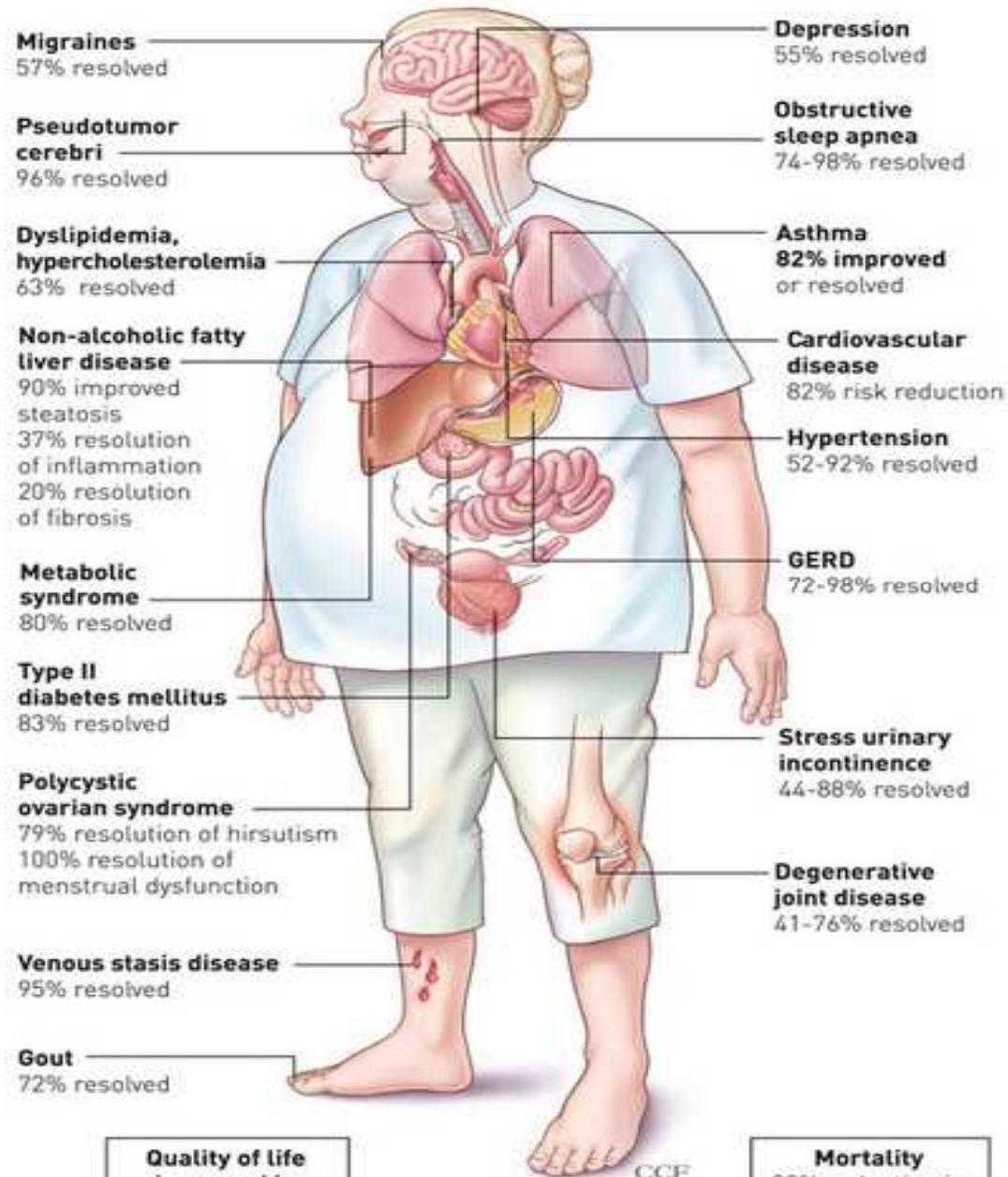
# Typical Patient for Bariatric Surgery



- **Age mid-40s**
- **Female >> Male**
- **Multiple Diets (e.g. Adkins, Jenny Craig, South Beach diet, Weight-Watchers)**
  - **YO-YO frequently**
  - **Weight loss > 50 lbs frequent**
    - **Unable to maintain weight loss**
- **Depression, Anxiety, Adjustment Issues**



## Co-morbidity Reduction After Bariatric Surgery



**Quality of life improved in 95% of patients**

**Mortality 89% reduction in 5-year mortality**

CCF ©2005



# Bariatric Surgery Efficacy

Procedure	% EWL	T2DM (Resolved)
Gastric Banding	47% (n=1848)	48%
Gastroplasty	68% (n=506)	68%
Gastric Bypass	62% (n=4204)	84%
BPD	70% (n=2480)	98%

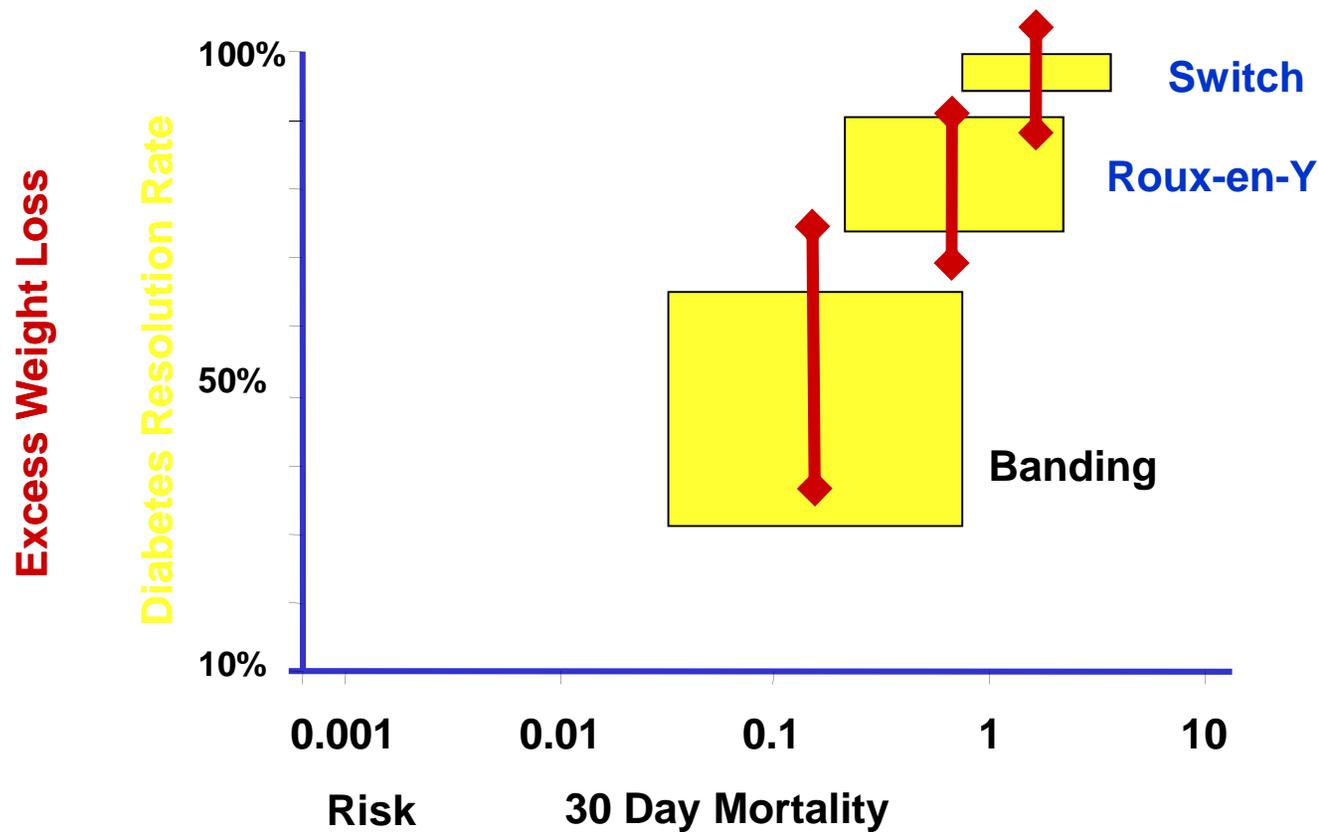
*Buchwald H. JAMA, 2004*

# Bariatric Surgery Efficacy

Author	Procedure	Resolution
Pories et al 1995	Gastric Bypass	89%
Torquati et al 2005	Gastric Bypass	74%
Schauer et al 2003	Gastric Bypass	82%
Sugerman et al 2003	Gastric Bypass	86%
Dixon et al 2003	Lap Band	64%
Gagner (unpublished)	Sleeve Gastrectomy	65%

# Bariatric Surgery is Effective, But Not Equal

Benefit



Adapted from Buckwald H, et al, Bariatric surgery, a systematic review and meta-analysis, *JAMA*. 2004;292:1724-1737 and Maggard M, et al, Meta-Analysis: Surgical Treatment of Obesity, *Ann Intern Med*. 2005;142:547-559.



***Every 2.2 lbs of weight loss equates to a 9% reduction in diabetes!***

**Jeffrey Sicat, MD  
Virginia Endocrinology and  
Osteoporosis Center**



# Sleep Apnea



- **Obesity = 50%**
- **Symptoms:**
  - drowsiness
  - inattentiveness
  - impaired job performance
- **Men > women**
  - higher incidence central obesity
- **Pre-Op Eval on all patient candidates**



# 1991 National Institutes Health Patient Selection Criteria



- **BMI > 40**
- **BMI 35 – 40 AND co-morbidities related**
  - **Functional** limitations due to body size or **joint** disease
  - Obstructive Sleep Apnea, Hypertension, Diabetes Mellitus, impaired glucose tolerance, hyperlipidemia
- After evaluation by a Multi-Disciplinary team
  - Have **low probability** of success with **non-operative** wt-loss measure
  - Be **well informed** with long and short term risks and benefits of surgery
  - Be **highly motivated** to lose weight through surgery
  - Have an accepted operative risk
  - Be willing to undergo **lifelong** medical surveillance
  - Passed **Written Exam**



# Relative Contraindications to weight loss surgery



- **Wound Healing problems**
- **Inability to Comprehend basic principles of Weight Loss Surgery**
- **Unable to Follow post-Op instructions**



# NCA Specific Criteria



**18 y.o. <AGE < 65 y.o.**

**BMI: < 50 kg/m<sup>2</sup>**

**NO active duty**

**NEED a real PCM**

**-to coordinate medical care**

**-optimize health pre-operatively**

**-standard screening updated: breast exam, mammo, pap smear, colonoscopies**

# PCM assistance to Bariatric Surgery

- Pre-Operative Optimization CVS & Respiratory**
  - Dyspnea on Exertion**
  - R/O Pulmonary Hypertension**
    - esp. h/o “Phen-Fen” -> ECHO for this history**
  - Smoking cessation**
  - Sedentary**
  - Hb A1C <8**
  - Peri-Operative VTE prophylaxis for h/o thromboembolism**
    - Hypercoagulable work-up**

# PCM assistance to Bariatric Surgery

- Problem Summary Lists
  - Closing the Loops
    - **H.pylori** untreated
    - **Hematuria** w/o work-up or documented f/u
  - AHLTA updates:
    - **Bariatric Eval HL...v2.3...**

# Bariatric AHLTA Template

The screenshot shows the AHLTA software interface. The main window is titled "LIN, HENRY: AHLTA (Privacy Act of 1974/FOUO)". The menu bar includes File, Edit, View, Go, Tools, Actions, and Help. The toolbar contains icons for Load, New, Save As, Edit, Delete, Refresh, Import, Export, Add Favorite, Move To Folder, Copy To Folder, and Close.

The interface is divided into several panes:

- Folder List:** Shows a tree view of folders including Patient List, CHCS-I, EWSR, Reports, Tools, Template Management (selected), List Management, Reminder Mapping, Questionnaire Setup, Web Browser, QQQCHCSII, WALTER, Demographics, Health History, Problems, Meds, Allergy, Wellness, Immunizations, Vital Signs Review, and PKC Couplers.
- Reminders:** Lists "Fecal Occult Blood (Guaiac) Screening", "Healthy Diet Counseling", and "Tobacco Cessation Counseling".
- Template Management:** The active pane, showing search results for "Bariatric Eval HL v". The search criteria are "Name Contains: Bariatric Eval HL v", "Begins With", "Contains", and "Case Insensitive". The results list includes folders like "GEN SURG APU WR", "GEN SURG CL BE", "GEN SURG CL WR", "GSURG GI APU BE", "WASHINGTON DC (WALTER REED ARMY MEDICAL CENTER)", and "Enterprise Folders". Under "Enterprise Folders", there is a "Name Search Results (16)" section listing various template versions and their associated users, such as "Bariatric Eval HL v1 1 (GEN SURG CL WR BBAA)", "Bariatric Eval HL v1 3 (BRAGG, VALERIE B)", "Bariatric Eval HL v1 4 (LIN, HENRY)", "Bariatric Eval HL v1 4 (GEN SURG CL BE BBAA)", "Bariatric Eval HL v1 5 (LIN, HENRY)", "Bariatric Eval HL v1 6 (LIN, HENRY)", "Bariatric Eval HL v1 6 (GEN SURG CL BE BBAA)", "Bariatric Eval HL v1 6 (GEN SURG CL WR BBAA)", "Bariatric Eval HL v1 6 (BRAGG, VALERIE B)", "Bariatric Eval HL v1 7 (LIN, HENRY)", "Bariatric Eval HL v2 1 wROS (LIN, HENRY)", "Bariatric Eval HL v2 2 wROS (LIN, HENRY)", "Bariatric Eval HL v2 3 wROS (LIN, HENRY)", "Bariatric Eval HL v2 3 wROS (GEN SURG CL BE BBAA)", and "Bariatric Eval HL v2 3 wROS (GEN SURG CL WR BBAA)".
- Template Preview:** Shows a preview of the selected template, "Bariatric Eval HL v2 3 wROS (LIN, HENRY)". The preview content includes "Linked Templates", "History of present illness", "Review of systems", "History", "Physical findings", "Tests", "Diagnoses", "Procedures", "Orders", "Other Therapies", and "Images".

# Bariatric Template: keys: \* ' -

The screenshot shows a medical software interface for a patient named Walter. The patient information at the top reads: "QQQCHCSII, WALTER 20/802-60-0301 50yo M COL DOB:01 Mar 1960". The interface is divided into several sections:

- Folder List (Left):** A tree view containing categories like Meds, Allergy, Wellness, Immunizations, Vital Signs Review, PKC Couplers, Readiness, Patient Questionnaires, DoD/WA/Theater Histor, Army Readiness, Lab, Radiology, Clinical Notes, Previous Encounters, Flowsheets, Current Encounter, Screening, Vital Signs Entry, and Drawing.
- Template Management (Top Center):** A pane showing a list of templates under "Symptoms". The selected template is "The Chief Complaint is: \*obesity". Other templates include "visit for: preoperative gastrointestinal exam", "visit for: postsurgical exam \*S/P TYPE OF SURGERY:", "referred by", "recent change in weight", "recent weight loss", "weight loss for over a year or more", "recent weight loss voluntary preoperatively", "recent weight loss voluntary from dieting", "recent weight loss voluntary from exercise", and "recent weight loss after surgical therapy for obesity".
- Main Text Area (Right):** A form for entering patient data. The "The Chief Complaint is:" field contains "\*obesity". Below it are fields for "Duration (numeric)", "Onset", and "Modifier". The "Reason for Visit" field contains "Visit for: preoperative gastrointestinal exam.". The "History of present illness" field contains "The Patient is a 50 year old male. He reported: involuntary recent weight gain. Heartburn \* and early satiety \*.". The "Physical findings" field is empty. The "Vital signs:" field contains "• Blood pressure > 140/90 mmHg. ° Normal.". The "General appearance:" field contains "° Well-appearing. ° Oriented to time, place, and person. ° Patient did not appear uncomfortable.".

# Bariatric Template: order set

start | Inbox - Micros... | Bari PCM v2 - ... | H:\Career\MD,... | Bariatric PCMs ... | Coding Basic D... | LIN,HENRY: A... | 11:55 AM

LIN,HENRY: AHLTA (Privacy Act of 1974/FOUO)

File Edit View Go Tools Actions Help

Preview Save Delete Template Mgt SO Drawing Disposition Sign Medication Subject All Options Close

QQQCHCSII, WALTER 20/802-60-0301 50yo M COL DOB:01 Mar 1960

Folder List

- Wellness
- Immunizations
- Vital Signs Review
- PKC Couplers
- Readiness
- Patient Questionnaires
- DoD/VA/Theater Histor
- Army Readiness
- Lab
- Radiology
- Clinical Notes
- Previous Encounters
- Flowsheets
- Current Encounter
- Screening
- Vital Signs Entry
- S/O
- Drawing
- A/P
- Disposition

Reminders

- Fecal Occult Blood (Guaiac) Screening
- Healthy Diet Counseling
- Tobacco Cessation Counseling

Appointments | Current Encounter | Template Management | **A/P**

Priority	ICD	Diagnosis	Chronic/Acute	Type	Priority	Orders & Procedures
1	278.01	OBESITY MORBID	Chronic	New	▲	
Plan/Comments						
2	789.01	abdominal pain in the right upper belly	Chronic	New	▼	
3	V58.75	Aftercare Following Surgery Of Digestive	Acute	New	<>	
4	729.2	NEURALGIA	Chronic	New		
5	V65.3	Dietary Counseling Pertaining To Obesity	Chronic	New		

Diagnosis | **Order Sets** | Procedure | Reminders | Order Consults | Order Lab | Order Rad | Order Med | Other Therapies

Bariatric Eval HL v2 3 wROS | Ordering Provider: LIN,HENRY | CHCS Connection: Ready

Select	Modify	Name	Details
<input type="checkbox"/>	<input type="checkbox"/>	BEHAVIORAL HEALTH MTF BE	Routine
<input type="checkbox"/>	<input type="checkbox"/>	GASTROENTEROLOGY MTF WR	Routine
<input checked="" type="checkbox"/>	<input type="checkbox"/>	INTERNAL MEDICINE MTF WR	Routine
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NUTRITIONAL MEDICINE MTF KI	Routine
<input checked="" type="checkbox"/>	<input type="checkbox"/>	SLEEP DISORDERS MTF BE	Routine
<input checked="" type="checkbox"/>	<input type="checkbox"/>	25-HYDROXY VITAMIN D	PREOP BLOOD
<input checked="" type="checkbox"/>	<input type="checkbox"/>	B12+FOLATE PANEL	Routine BLOOD
<input type="checkbox"/>	<input type="checkbox"/>	BASIC METABOLIC PANEL	Routine BLOOD
<input checked="" type="checkbox"/>	<input type="checkbox"/>	CBC WITH DIFFERENTIAL	Routine BLOOD
<input type="checkbox"/>	<input type="checkbox"/>	FERRITIN	Routine BLOOD
<input type="checkbox"/>	<input type="checkbox"/>	HEMOGLOBIN A1C	Routine BLOOD

UnSelect All | Select All | Refresh Data | Submit | Add to Default Template | Save as Order Set

Health History

# PCM assistance w/ Bariatric Surgery

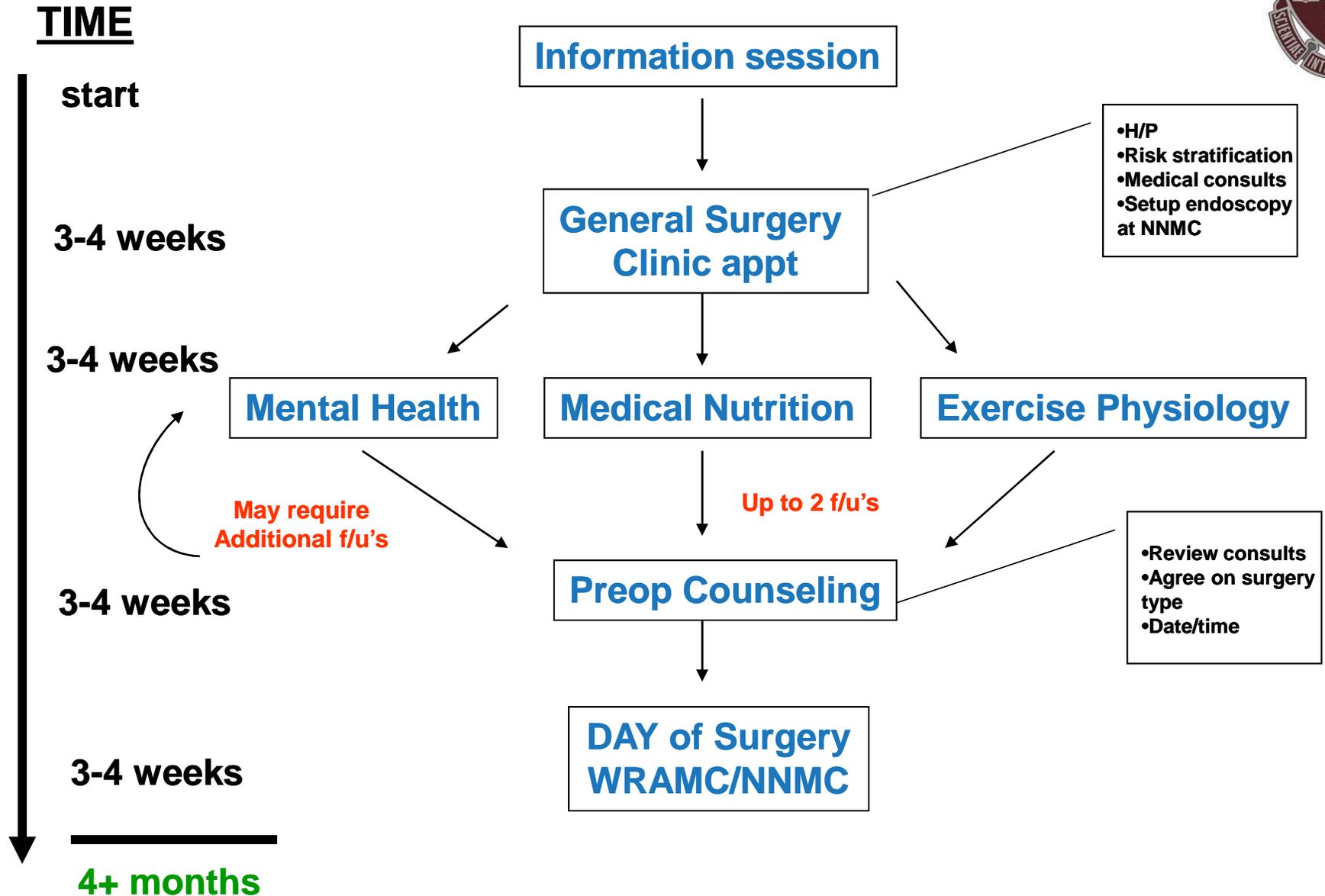
## Medications:

- Gastric Bypass pts
  - **No NSAIDs**
  - **No ASA** unless...
    - Even baby ASA
  - **Liquid** formulation vs. ***pill size***
    - Trial pre-op
- No bisphosphonates
- No **metformin** pre-op
- No **OCPs** (> 1mo. + post-op contraception x 2y)

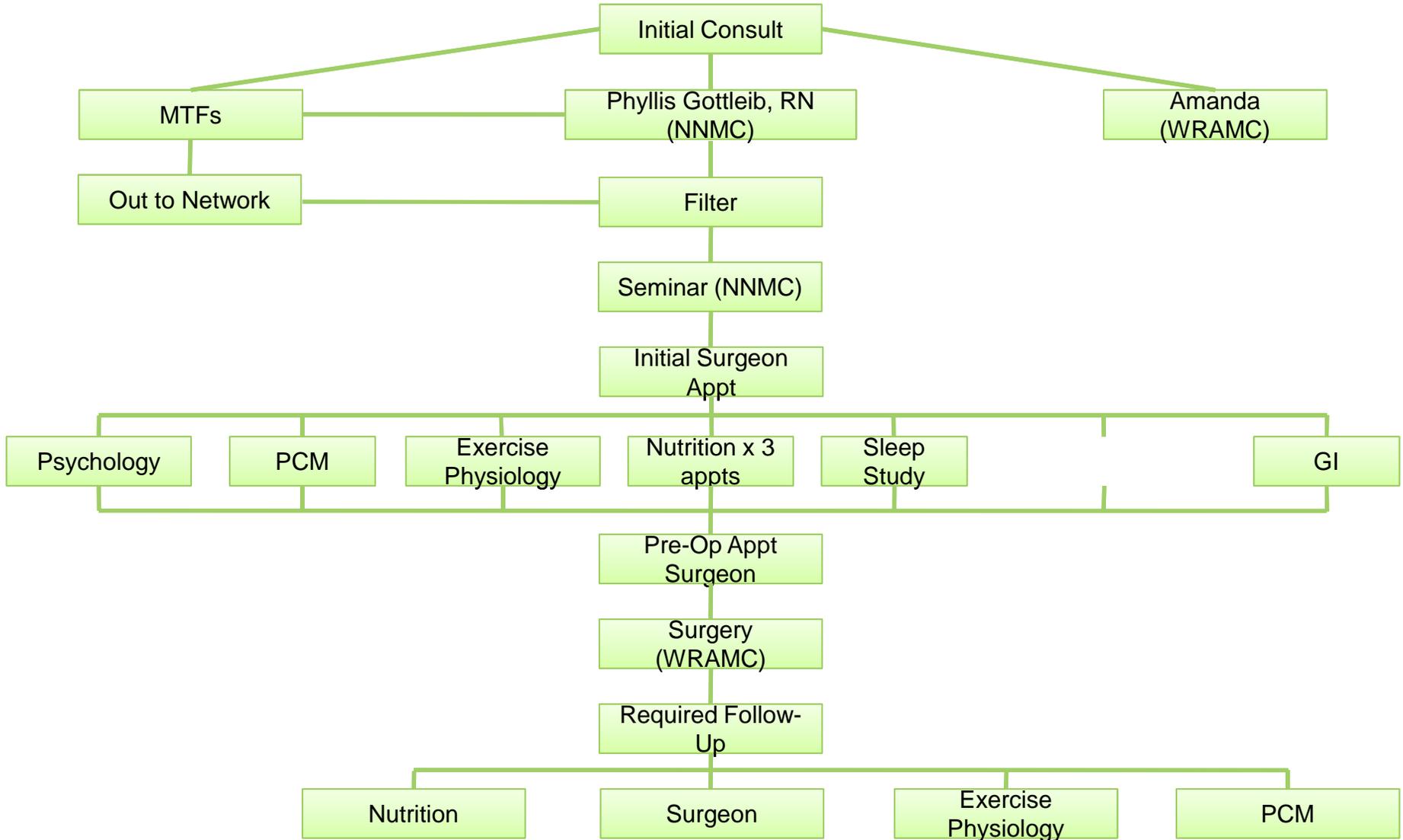
## Supplements

- Herbals stopped
  - Ginkgo Biloba, garlic
- Gastric Bypass
  - Fe<sup>2+</sup>
  - Folate
  - Vit B12
- Calcium **CITRATE**
  - (>1000 mg/ d)
  - Better absorbed
- Vitamin D
- Vitamin A (wound healing)
- **Potassium** in *liquid* form

# Pathway to Surgery

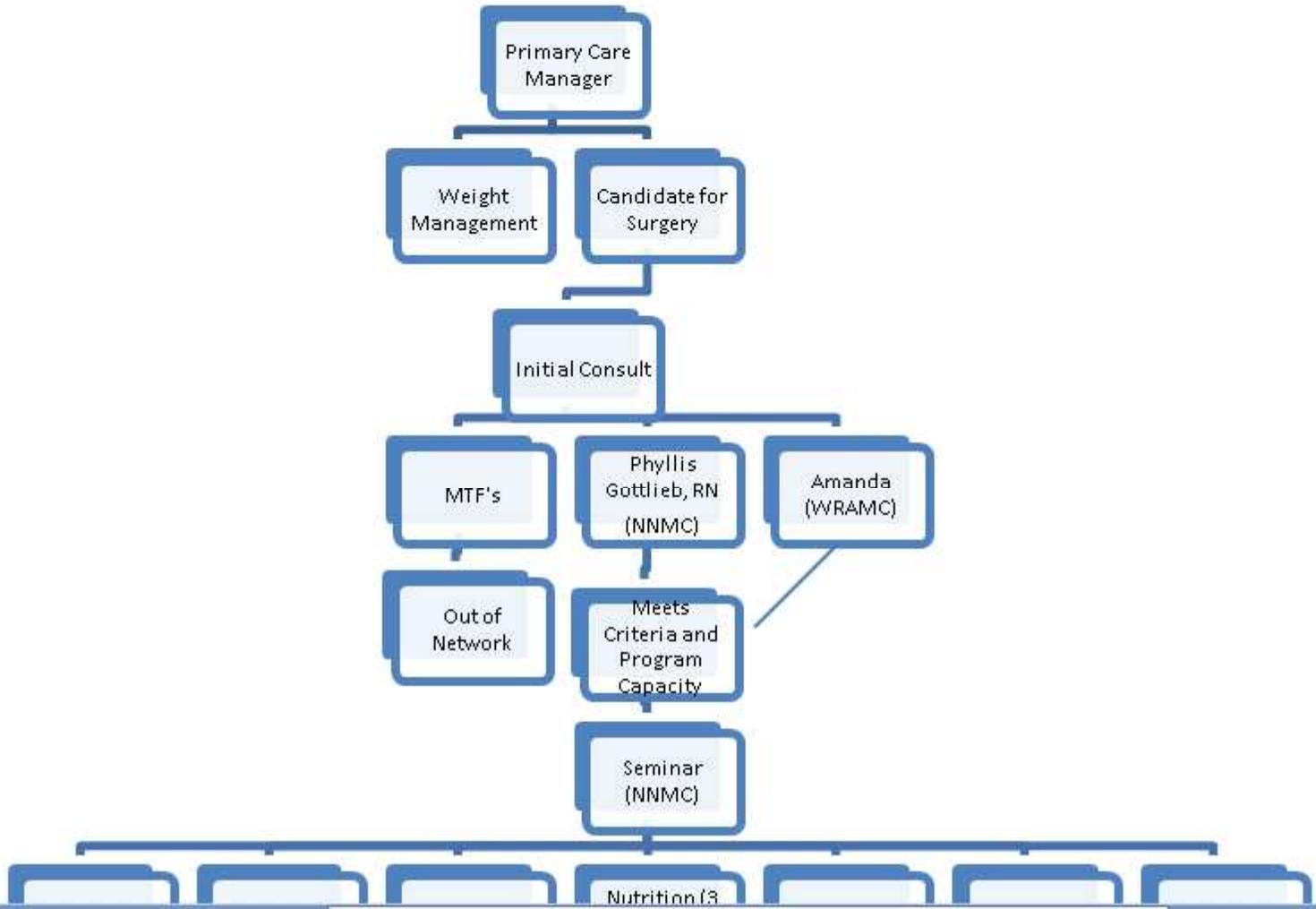


# Bariatric Consult Flow



Sleeve & Bypass:  
 3 months  
 6 months  
 9 months  
 Every 6mo x 2 yrs

Band:  
 Monthly



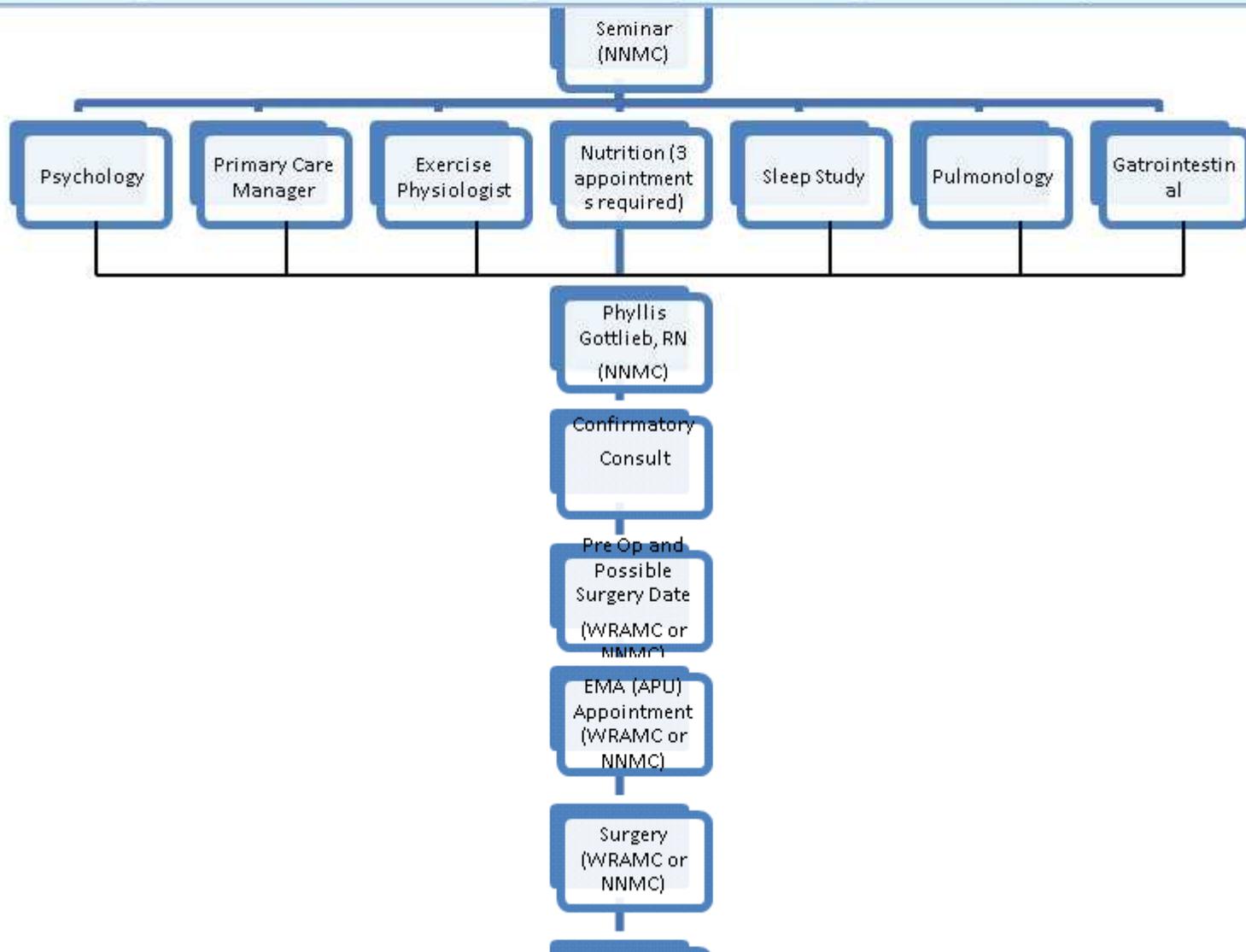
Click to add notes

131.158.160.71

Home Insert Design Animations Slide Show Review View

Paste New Slide Reset Delete Layout Slides Font Paragraph Drawing Editing

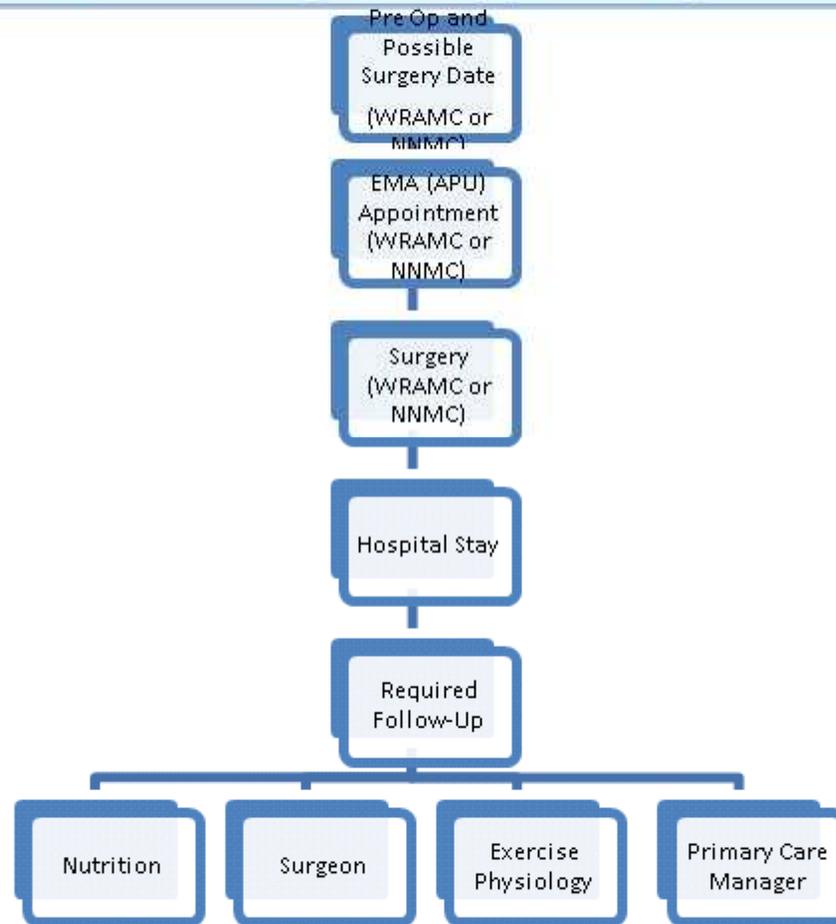
Clipboard Slides Font Paragraph Drawing Editing



Clipboard Slides Font Paragraph Drawing Editing

Paste New Slide Reset Delete Layout Font Paragraph Drawing Editing

Shape Fill Shape Outline Shape Effects Find Replace Select



## Progress toward My Weight Loss Surgery

Patient's Name

\_\_\_\_\_

-

Type of surgery to be performed

\_\_\_\_\_

### Bariatric Information Session

This patient attended the NCA Surgical Weight Loss Program Information Session on the following date: \_\_\_\_\_

Nurse coordinator's signature \_\_\_\_\_

Date \_\_\_\_\_

### PCM

**I have ordered the following labwork:**

Complete Metabolic Panel

Results were WNL

The following results were abnormal:

\_\_\_\_\_

Complete Blood Count

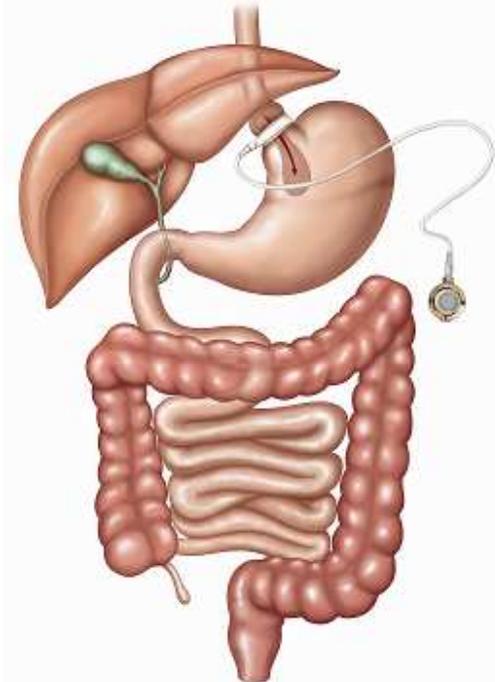
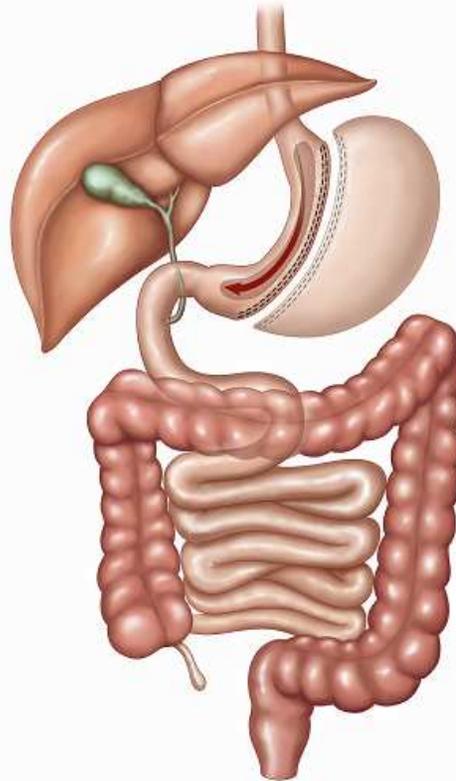
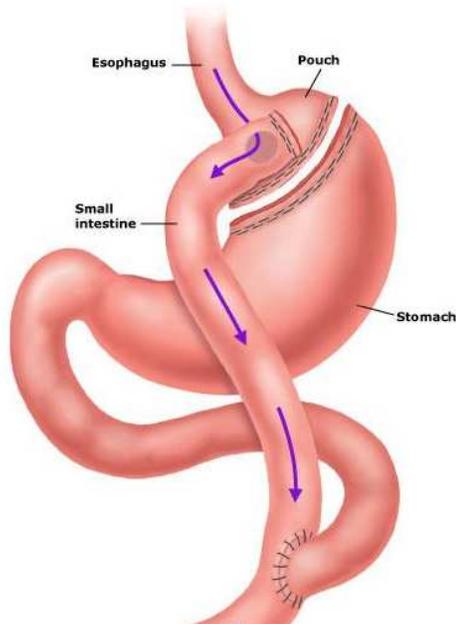


# PCM assistance to Bariatric Surgery

- Pre-Operative Consults
  - AHLTA Template:
    - Bariatric Eval HL ... v2.3...**
    - 1. **Bariatric Dietician** (all sites)
    - 2. **Exercise Physiologist** @ WRAMC:  
Travis Combest 202-782-1249
    - 3. **Sleep Study**: r/o OSA
- **Bariatricians**: any interest?
  - w/ Wellness Center
  - “Medical Home”

# 3 Surgical Options

Roux-en-Y gastric bypass (RYGB)



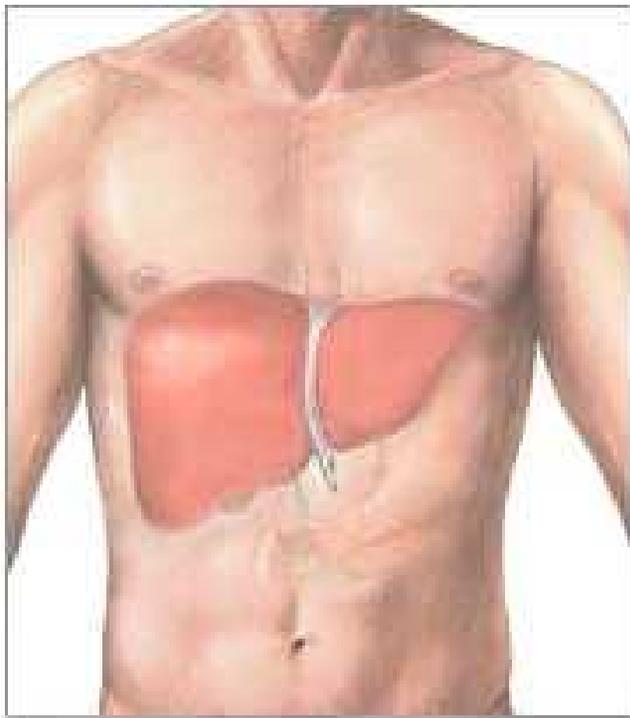
- RNY GBP
- EWL 2y 65-85%
- EWL 5y 65-85%

Sleeve  
40-80%  
40-80%

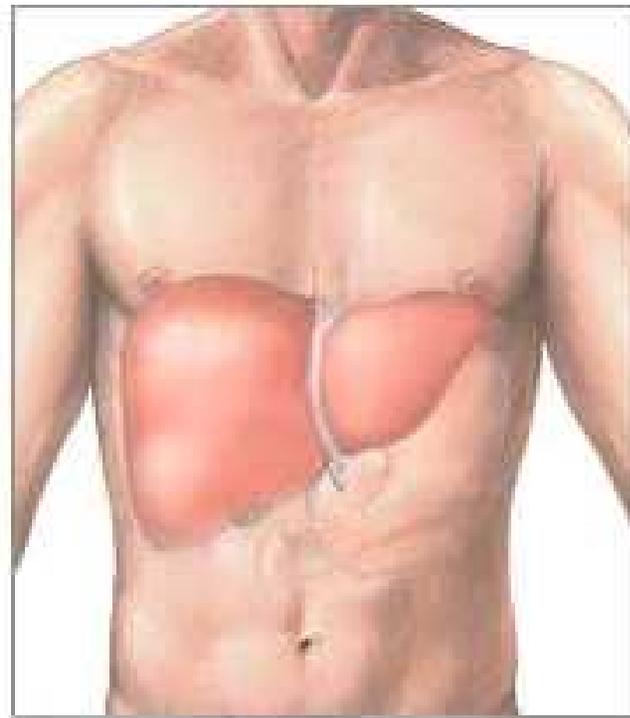
Band  
35-85%  
35-80%

# Very Low Calorie Diet pre-operatively

Normal liver



Enlarged liver due  
to hepatomegaly



	GHRELIN	GIP	GLP1/PYY
	↑ (8)	— (40)	— (40)
	? ↑ (15)	(33) ↑ / ↓ (53) *	↑↑↑ (38)
	↓↓↓ (7)	?	↑ (16)
	↓ (10)	↓↓ (37)	↑↑↑↑ (50)
	↑↑↑ (6)	↑ (53)	↓ (50)

\* Conflicting data, likely due to differing lengths of jejunum excluded from nutrient exposure.

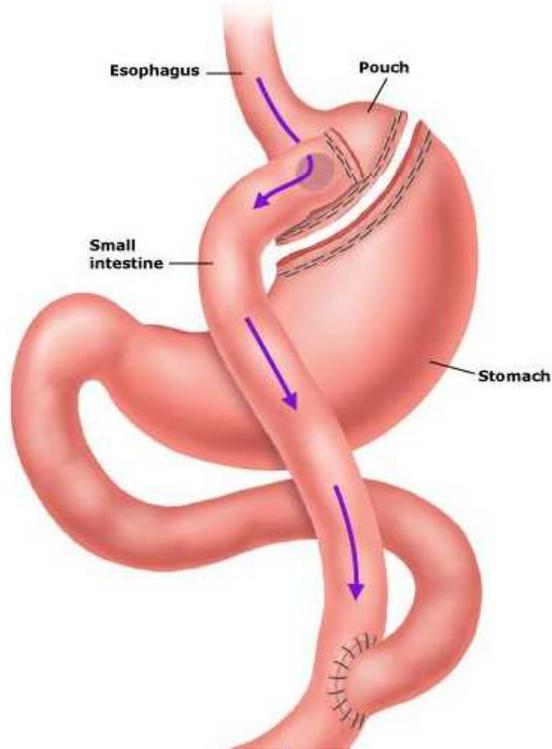
**FIGURE 2. Summarizes the hormonal changes with the different bariatric surgeries.**



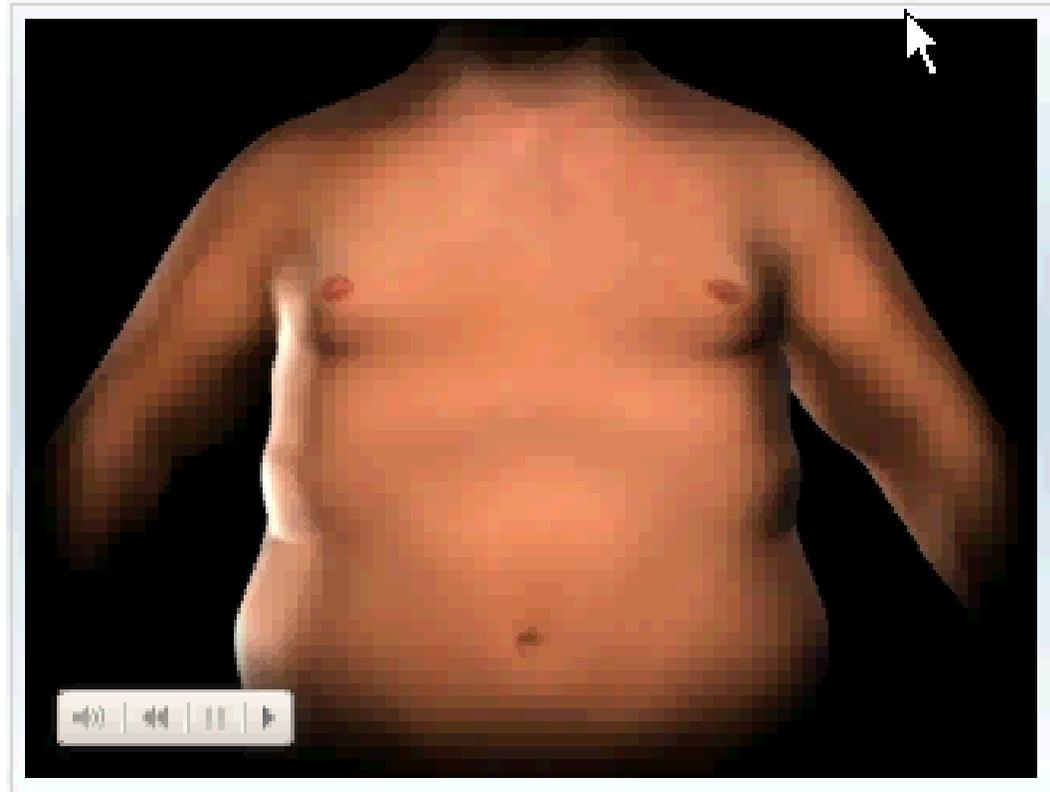
# Laparoscopic Gastric Bypass



Roux-en-Y gastric bypass (RYGB)



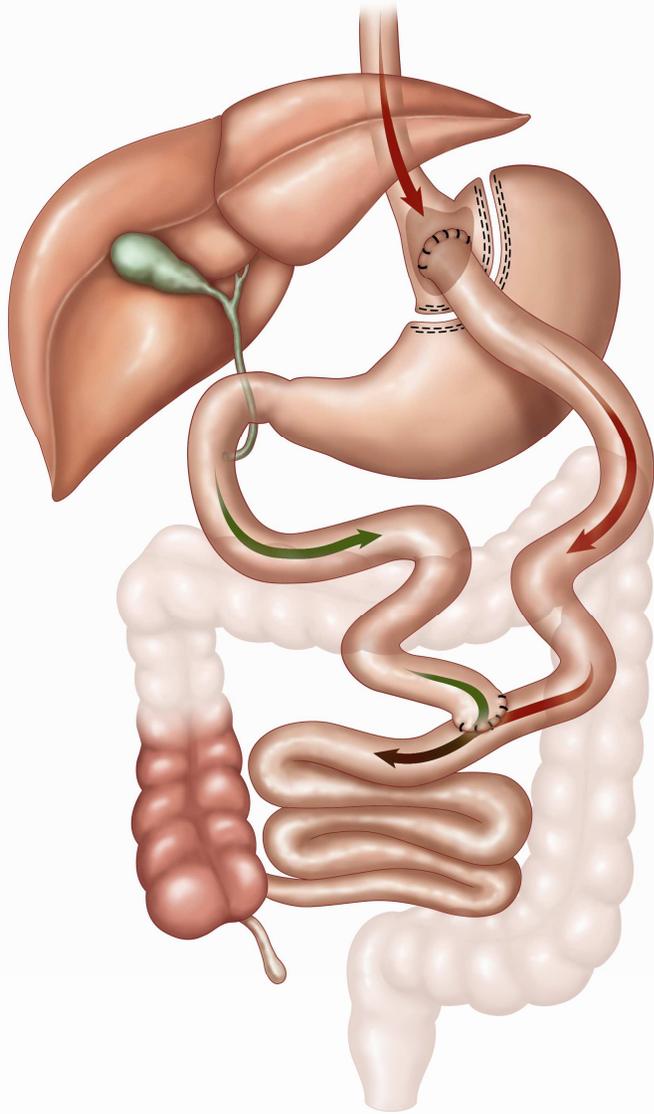
*Animation: Gastric bypass surgery*



# Laparoscopic Gastric Bypass

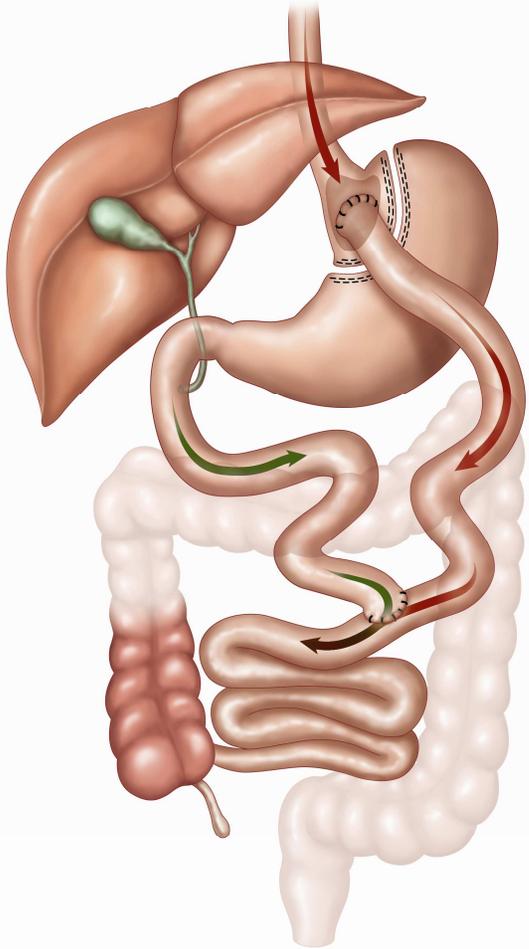


# Weight loss for RNY GBP



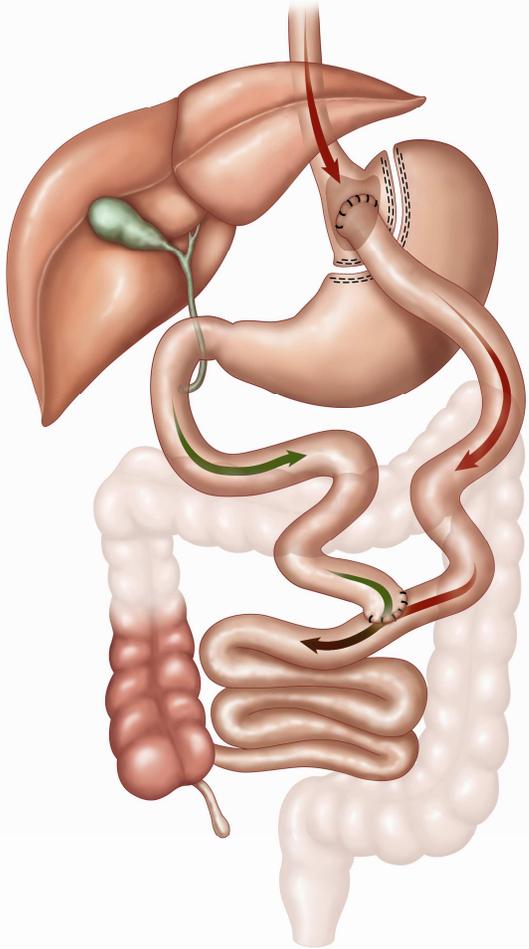
- About **100 lbs**,
  - **65%-85% EBW** (gold standard operation)
  - 35% of the BMI.
- Weight loss generally levels off
  - in 1-2 years
  - regain  $\geq$  20 lb common long-term
- Decreases **Gherilin**
  - (hormone that increases appetite)
  - (temporarily? For 6 mo.s)
- Increases **PYY** (appetite suppressant hormone)

# Operative mortality (death) and morbidity (injury)



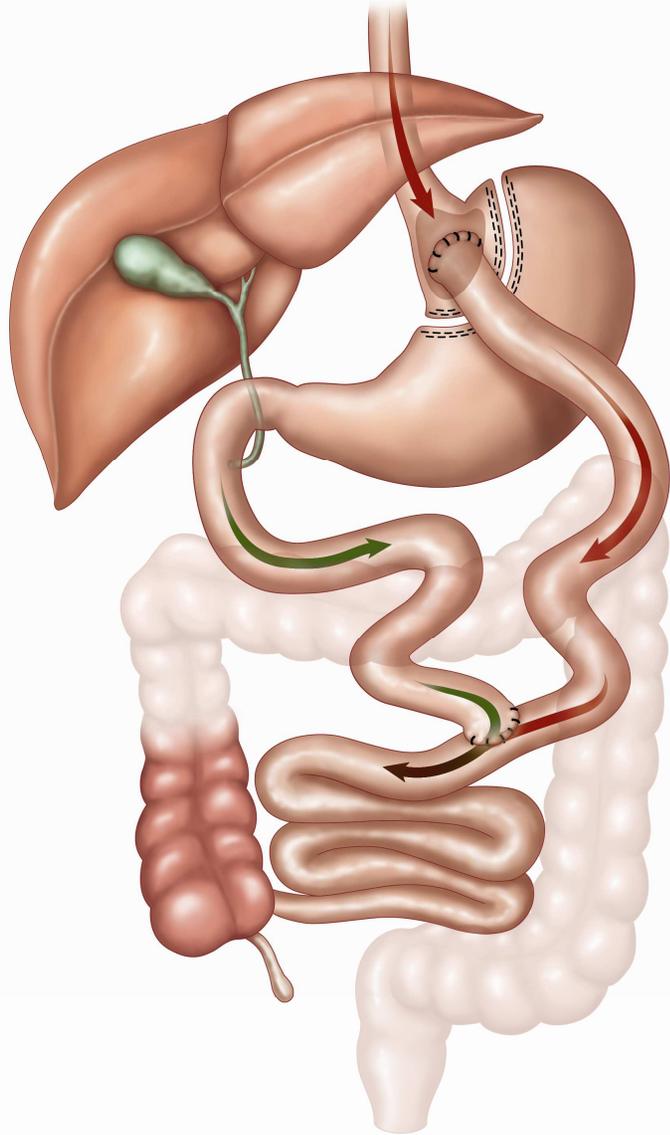
- Overall (**30 day**) mortality for gastric bypass when performed by skilled surgeons is about **0.5%**
- Overall Operative morbidity (eg, pulmonary emboli, anastomotic leak, bleeding, wound infection) is **5%**
  - **Leak**  $\leq$  **3%** - breakdown in the staple lines from cutting and formation of connections between intestine and stomach pouch
  - **Bleeding**  $\leq$  **4%** - this occurs at the staple lines after the stapling device cut the bowel
  - **Splenectomy** **1%**

## Operative mortality (death) and morbidity (injury)



- Overall Operative morbidity (eg, pulmonary emboli, anastomotic leak, bleeding, wound infection) is **5%**
  - **VTE**  $\leq$  **2%** - but **death** from this complication accounts for **30-50%** of patient deaths due to RNY GBP
    - DVT 1-2.0%
    - PE 0.5%

# Long-term Complications



- **internal hernias** (bowel obstructions)

- **1-10%**

- More common in laparoscopic technique

- Difficult to diagnose (vague abd pain)

- **high rate of reoperation** to make diagnosis

**stomal stenosis** – opening to gastric pouch becomes too tight

- **5-15%**

- Treatment: balloon dilatation via endoscope

**marginal ulcers** – ulcers downstream from new connection to stomach pouch

- **1-16%**

- Alcohol and **cigarette** smoking are major risk factor

- **NSAIDS** contraindicated in bypass pts

# Long term complications

## Nutritional Deficiencies

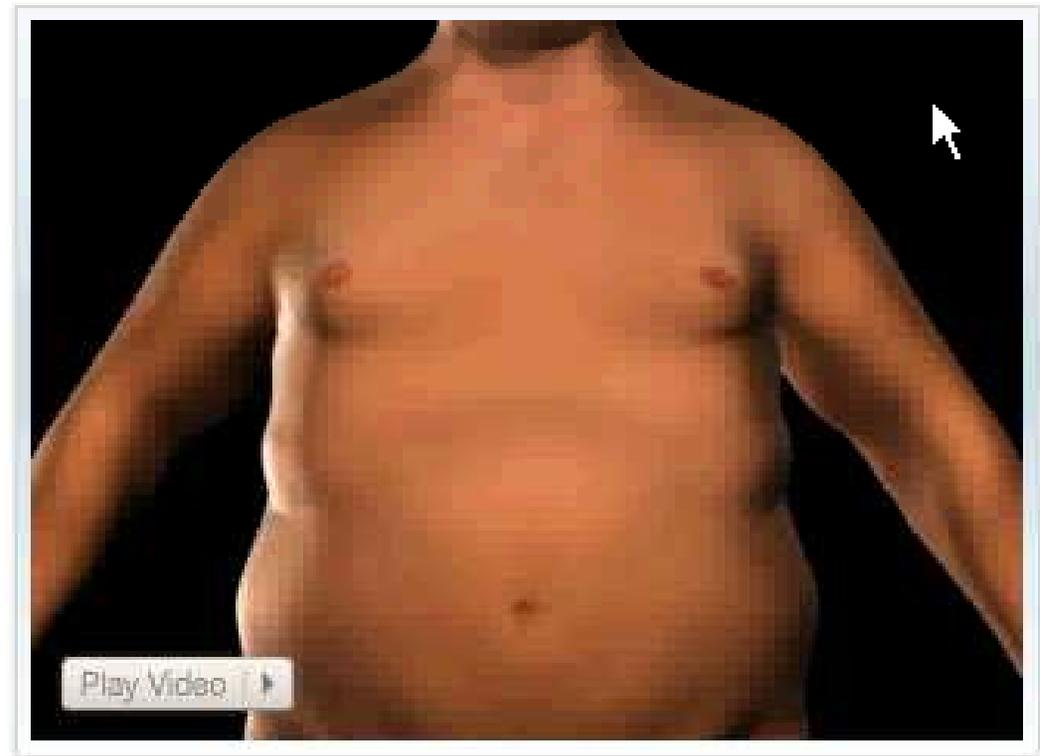
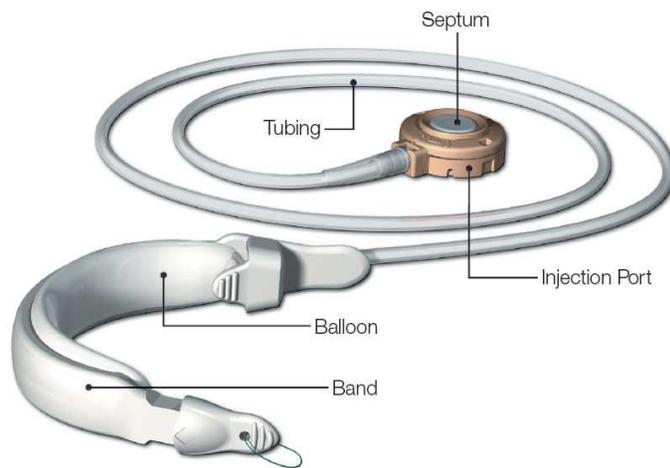
- Non-reversible neurologic diseases:  
paralysis
- **Fat-soluble vitamins:**
  - **vitamin B12** (specifically, cobalamin)
  - **vitamin D**
  - **Vitamin A**
- **iron**
- **folate**
- **calcium**



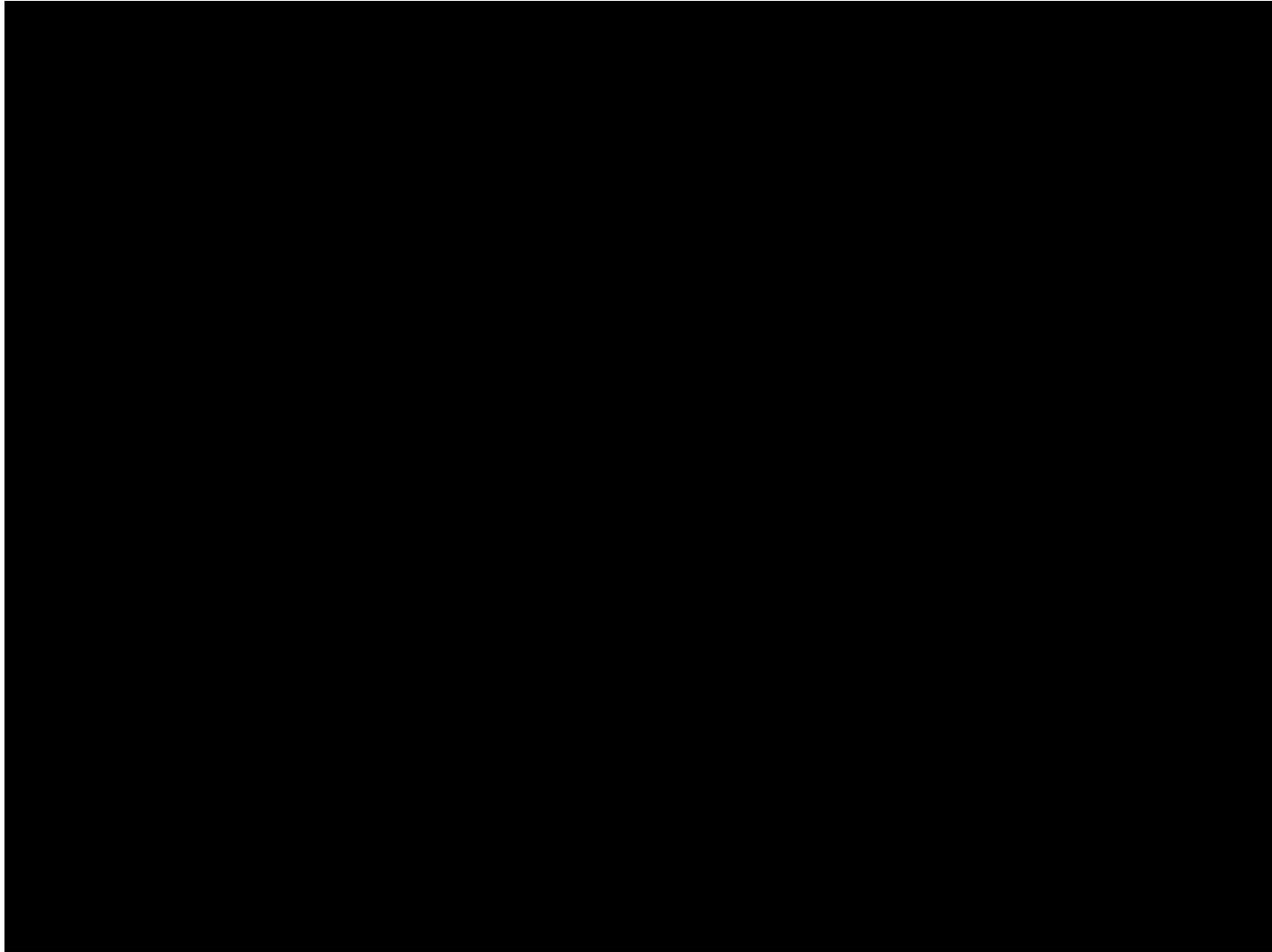
# Laparoscopic Gastric Adjustable Banding



*Animation: Gastric Band Surgery*



# Laparoscopic Banding



# Gastric Banding Contraindications

Situations where the risks are greater than the benefits that would be gained from surgery are contraindications. These include:

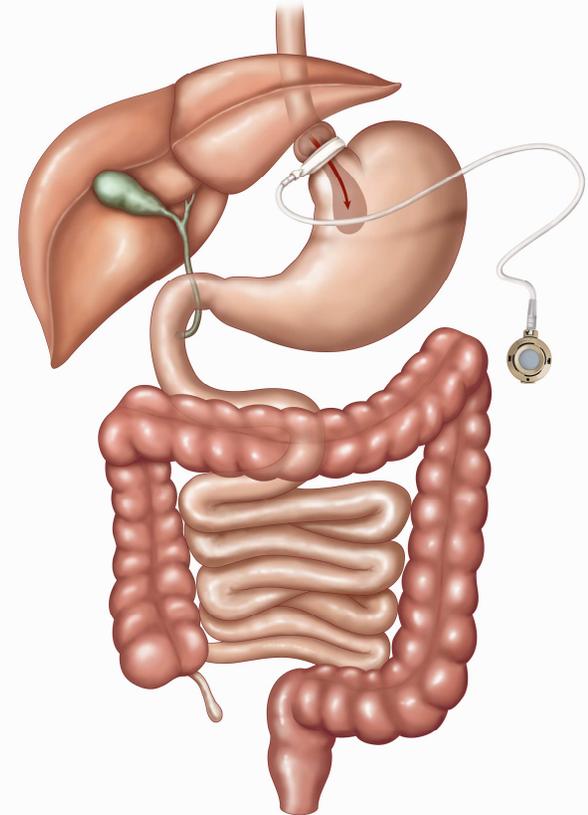
- Inflammation of the digestive tract, including
  - ulcers,
  - severe esophagitis,
  - Crohn's disease
- Severe heart or lung disease
- Upper digestive tract bleeding conditions due to enlarged or fragile veins
  - Portal hypertension
  - Cirrhosis of the liver
- Abnormal digestive tract anatomy
- Chronic pancreatitis

# Gastric Banding Contraindications – con't.

- Infection of any type, anywhere in your body
- Known allergies to the implant materials
- Using steroids for a long period of time or within 15 days of surgery
- Currently pregnant
- Age <18 years of age
- Unwilling to make significant changes in eating and behavior patterns LIFE-LONG
  - Monthly follow-ups for 1<sup>st</sup> year
  - Every 2-3 months 2<sup>nd</sup> year
  - Annually thereafter
- Conditions or behaviors that would make it difficult to appropriately follow directions

# Risks Associated with Gastric Banding

- Migration of implant
  - band **erosion** (1%)
  - band **slippage** (4%)
  - port displacement (flip)
- Tubing-related complications
  - port disconnection,
  - tubing kinking
- Band leak
- Esophageal spasm
- Gastroesophageal reflux disease (**GERD**)
  - -> thus **hiatal hernia repair** required
- Inflammation of the esophagus or stomach
- Port-site **infection** (1%)
- Death (<0.5%)



Note: Complications may result in re-operations. These complications are not usually life-threatening.

# Weight Loss at Three Years

## U.S. Clinical Study Results Overview

%EWL At Three Years	Number of Patients	Percent of Patients
Gained weight	5	2%
0% to 5%	6	3%
5% to 25%	41	18%
25% to 33%	33	14%
33% to 50%	63	28%
50% to 75%	56	25%
75% to 100%	24	10%
Total:	228	100%

# Results

## 3yrs SAGB/LB

- excess weight loss **56%/ 50%**
- resolution diabetes **61%/ 60%**
- hypertension **62%/ 44%**
  
- *Adverse event (AE) rates appeared comparable*
- mortality was equivalent **0.1%**

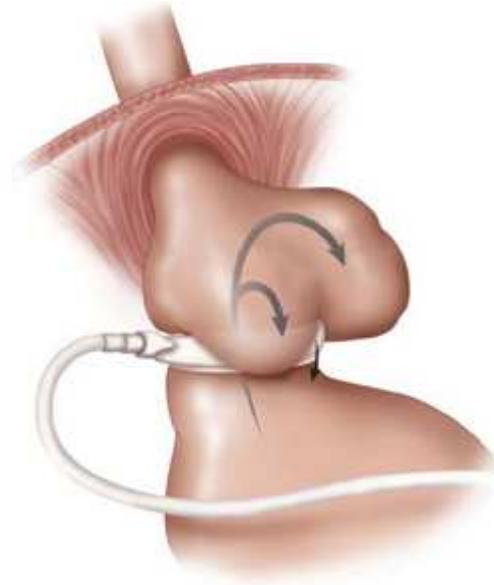
# Late Complications of Lap Band

- late slippage/  
migration

  - 4.0% and 6.2%

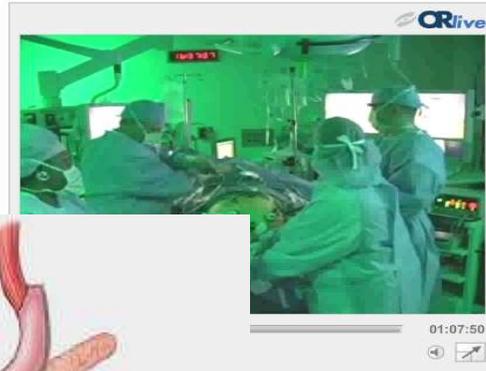
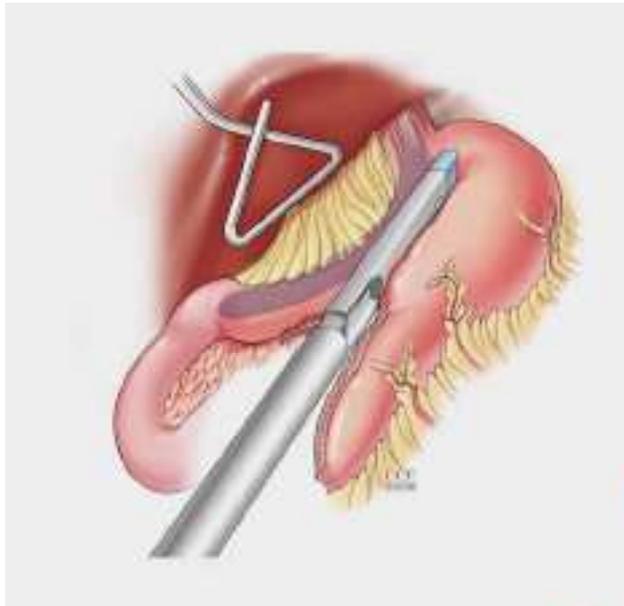
- pouch dilatation

  - 1.7% to 5.1%

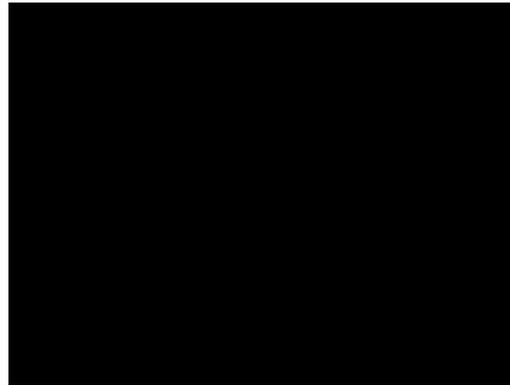




# Laparoscopic Sleeve Gastrectomy

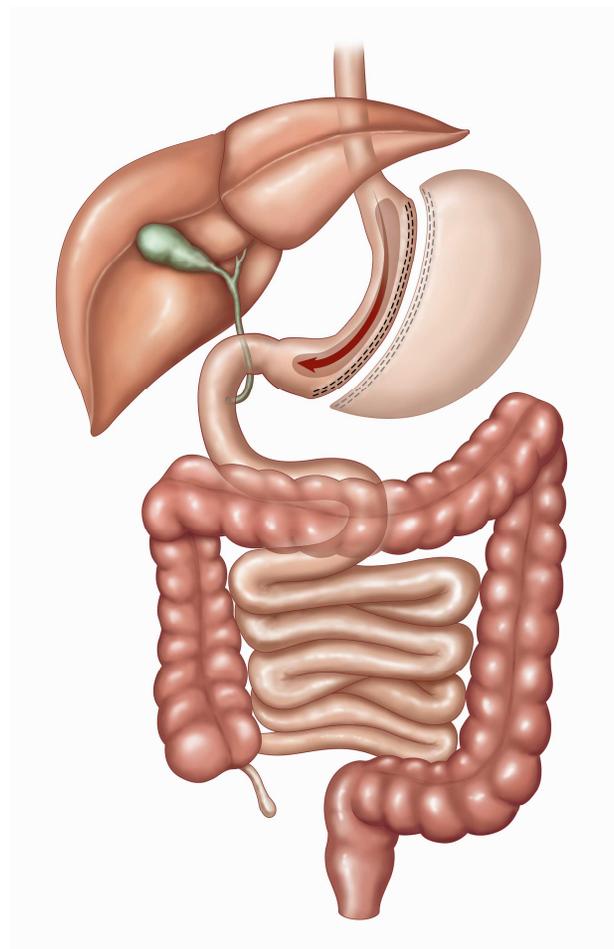


# Laparoscopic Sleeve Gastrectomy



# Lap Sleeve Gastrectomy

- 36-40 Fr Bougie
- Long Staple Line
  - (leak risk)
- Decreases **Gherilin**  
(hormone that increases appetite)
- Increases **pyy 3-36**:  
(*appetite suppressant*)
- OK for NSAIDs
- DM resolution
  - (off meds) 82%
- Pulmonary Embolus



# “Risk”



## DEATH

0.1 %

0.39%

0.5 %

## MORBIDITY

5.0-40.0%

2.9%

5.0 %

**LAP  
BAND**

**LAP  
GASTRIC  
SLEEVE**

**LAP  
GASTRIC  
BYPASS**

## %EWL

50 %

60 %

70 %

OR time  
(avg) 1 hr

2.5 hr

4 hr

Hosp Days  
(avg) 1 day

2-3 days

3 days

# Effectiveness



# “Risk”



## DEATH

0.1 %

0.39%

0.5 %

## MORBIDITY

5.0-40.0%

2.9%

5.0 %

**LAP  
BAND**

**LAP  
GASTRIC  
SLEEVE**

**LAP  
GASTRIC  
BYPASS**

## %EWL



# Effectiveness

50 %

60 %

70 %

7 days

30 days

30 days

3 days

7 days

7 days

# Summary



- **Surgery NOT for everyone**
  - Surgery is a TOOL, *not* a solution!
  - Surgery is NOT the easy way out
    - **Much work goes with surgery:**
      - Permanent Changes
        - » to EATING HABITS
      - Permanent Exercise Habits
- **Applying for Center of Excellence**

# Post-Bariatric Surgery

## Abdominal Pain

### Evaluation

- See bariatric surgeon if abdominal pain accompanied with:
  - Fever
  - **Tachycardia** (HR > 130)
  - Shoulder pain (worsening or new onset)
  - Recurrent cramping pain in the upper abdomen
  - Disproportionate abdominal tenderness or pain
  - Shortness of breath (symptom of pulmonary embolism)
  - **Vomiting**
  - Dry heaves
  - Bloating with hiccups
  - Pain out of proportion to exam
  - Inability to tolerate liquids for 24 hours

**Thank You!**



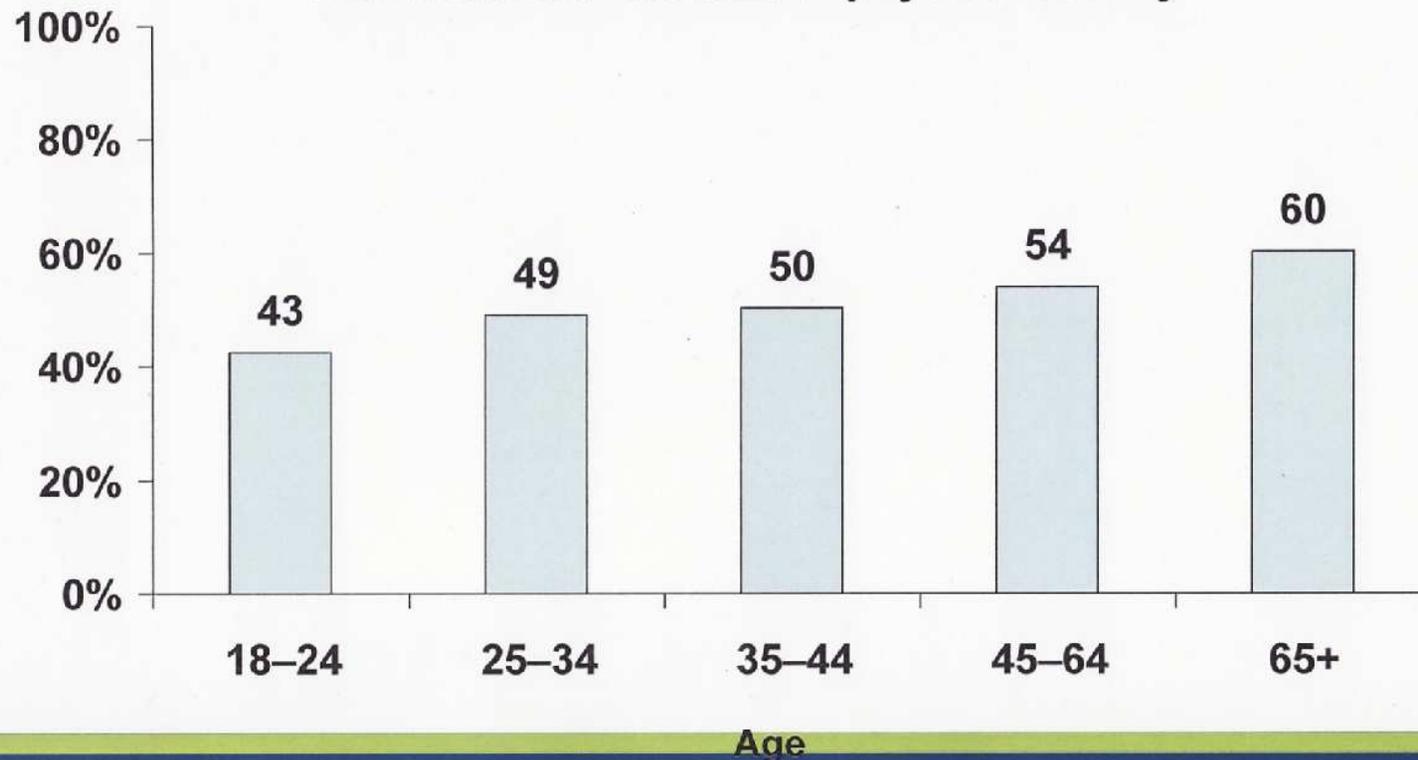


**Table 17-1 -- Results of the Three Major Bariatric Procedures**

PARAMETER	BUCHWALD [25]	MAGGARD [26]
AGB weight loss (kg)	39.7 (42.2-37.2)	34.8 (29.5-40.1)
AGB EWL (%)	61.2 (64.4-58.1)	
AGB mortality	0.1% (2297 patients)	0.02% (9222) patients)
RYGB weight loss (kg)	43.5 (48.1-38.8)	41.5 (37.4-45.6)
RYGB EWL (%)	61.6 (66.5-56.7)	
RYGB mortality	0.5% (5644 patients)	0.3% (11,290 patients)
BPD/DS weight loss (kg)	46.4 (51.6-41.2)	53.1 (47.4-58.8)
BPD/DS EWL (%)	70.1 (73.9-66.3)	
BPD/DS mortality	1.1% (3030 patients)	0.9% (2808 patients)

## Many Americans are not getting enough physical activity, a key risk factor for chronic diseases and obesity

Percent of U.S. adults who do NOT get the recommended amount of physical activity



Source: Centers for Disease Control and Prevention. Prevalence of Regular Physical Activity Among Adults — United States, 2001 and 2005. Accessed at: [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5640a1.htm?s\\_cid=mm5640a1](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5640a1.htm?s_cid=mm5640a1)





# "EVOLUTION"

© 2004 CAROL LAY





***Welcome!***

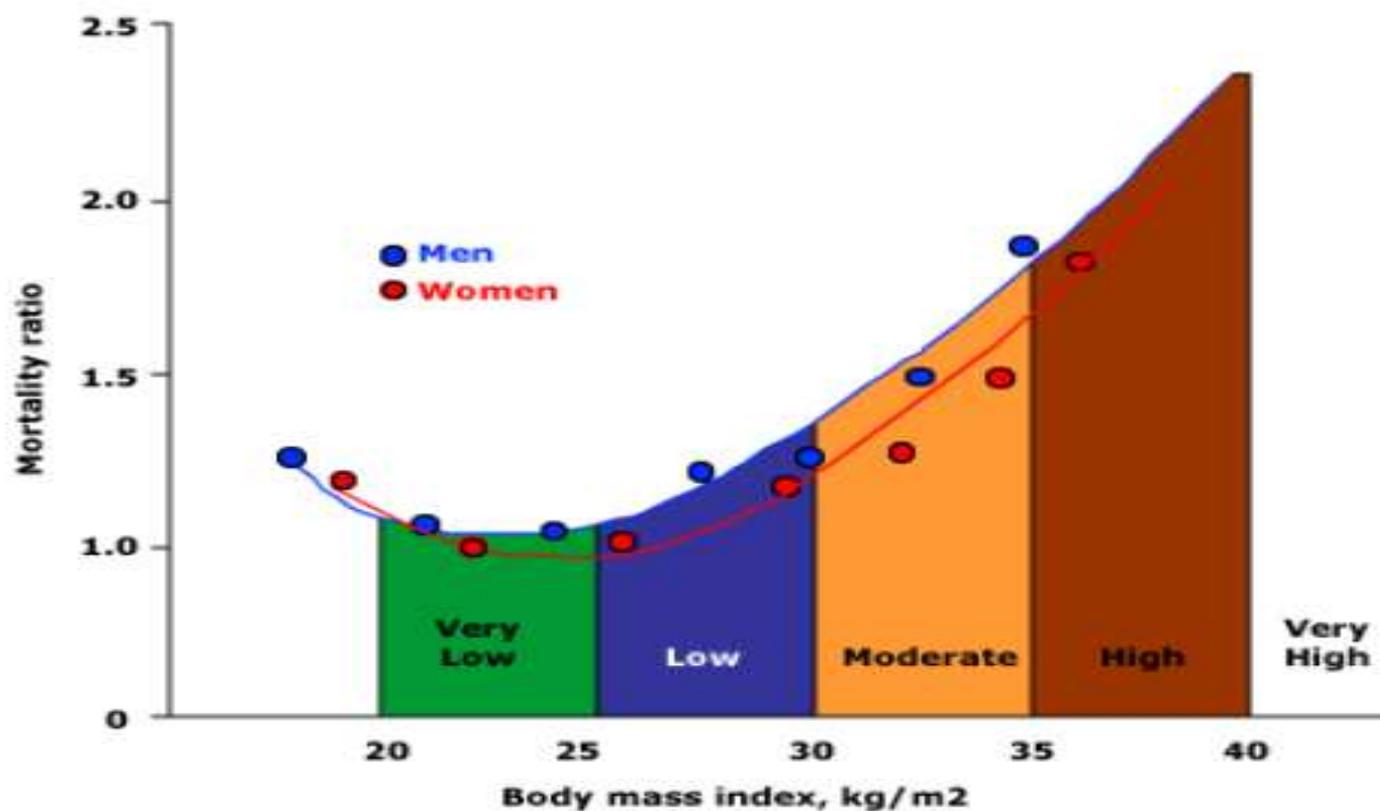


# BMI Calculation

<http://www.nhlbisupport.com/bmi/>



## Relation between mortality and body mass index



At a body mass index below 20 kg/m<sup>2</sup> and above 25 kg/m<sup>2</sup> there is an increase in relative mortality for men and women. *Data from Lew, EA. Ann Intern Med 1985; 103:1024.*