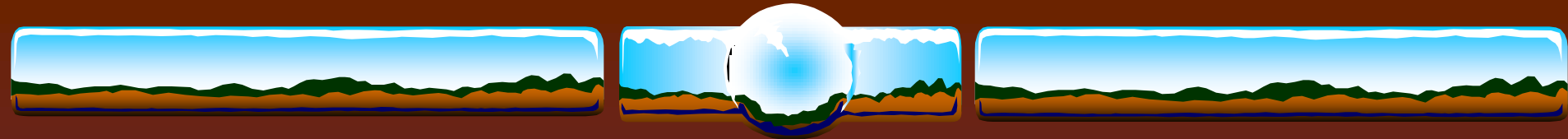


# EATING DISORDERS



# DSM-IV CRITERIA-Anorexia Nervosa

- ❖ Refusal to maintain weight within a normal range for height and age (more than 15 percent below ideal body weight)
- ❖ Fear of weight gain
- ❖ Severe body image disturbance in which body image is the predominant measure of self-worth with denial of the seriousness of the illness
- ❖ In postmenarchal females, absence of the menstrual cycle, or amenorrhea (greater than three cycles).



# SUBTYPES

- ❖ Restricting

- ❖ Restriction of intake to reduce weight

- ❖ Binge eating/purging

- ❖ May binge and/or purge to control weight
  - ❖ Considered anorexic if she is 15% below ideal body weight



# SIGNS AND SYMPTOMS

- ❖ Dry skin
- ❖ Cold intolerance
- ❖ Blue hands and feet
- ❖ Constipation
- ❖ Bloating
- ❖ Delayed puberty
- ❖ Primary or secondary amenorrhea
- ❖ Nerve compression
- ❖ Fainting
- ❖ Orthostatic hypotension
- ❖ Lanugo hair
- ❖ Scalp hair loss
- ❖ Early satiety
- ❖ Weakness, fatigue
- ❖ Short stature
- ❖ Osteopenia
- ❖ Breast atrophy
- ❖ Atrophic vaginitis
- ❖ Pitting edema
- ❖ Cardiac murmurs
- ❖ Sinus brady
- ❖ hypothermia



# DSM-IV CRITERIA- Bulimia

- ❖ Episodes of binge eating with a sense of loss of control
- ❖ Binge eating is followed by compensatory behavior of the purging type (self-induced vomiting, laxative abuse, diuretic abuse) or nonpurging type (excessive exercise, fasting, or strict diets).
- ❖ Binges and the resulting compensatory behavior must occur a minimum of two times per week for three months
- ❖ Dissatisfaction with body shape and weight



# SIGNS AND SYMPTOMS

- ❖ Mouth sores
- ❖ Pharyngeal trauma
- ❖ Dental caries
- ❖ Heartburn, chest pain
- ❖ Esophageal rupture
- ❖ Impulsivity:
  - ❖ Stealing
  - ❖ Alcohol abuse
  - ❖ Drugs/tobacco
- ❖ Muscle cramps
- ❖ Weakness
- ❖ Bloody diarrhea
- ❖ Bleeding or easy bruising
- ❖ Irregular periods
- ❖ Fainting
- ❖ Swollen parotid glands
- ❖ hypotension



**Hypoprotein  
Oedema**



# Binge Eating Disorder

## RESEARCH CRITERIA

- ❖ Eating, in a discrete period of time, an amount of food that is larger than most people would eat in a similar period
- ❖ Occurs 2 days per week for a six month duration
- ❖ Associated with a lack of control and with distress over the binge eating





# BED

- ❖ Must have at least 3 of the 5 criteria
  - ❖ Eating much more rapidly than normal
  - ❖ Eating until uncomfortably full
  - ❖ Eating large amounts of food when not feeling physically hungry
  - ❖ Eating alone because of embarrassment
  - ❖ Feeling disgusted, depressed or very guilty over overeating



# EPIDEMIOLOGY

## ❖ Anorexia

- ❖ Incidence rates have increased in the past 25 years
- ❖ Affects 1% of adolescent females
- ❖ Rates for men only 10% of those for women
- ❖ Seen in patients as young as 6

## ❖ Bulimia

- ❖ Occurs in 1-5% of high school girls
- ❖ As high as 19% in college women



# Epidemiology

- ❖ Binge Eating Disorder (BED)
  - ❖ Occurs more commonly in women
  - ❖ Depending on population surveyed, can vary from 3% to 30%



# PATHOGENESIS

- ❖ No consensus on precise cause
- ❖ Combination of psychological, biological, family, genetic, environmental and social factors



# ASSOCIATED FACTORS

- ❖ History of dieting in adolescent children
- ❖ Childhood preoccupation with a thin body and social pressure about weight
- ❖ Sports and artistic endeavors in which leanness is emphasized
- ❖ Women whose first degree relatives have eating disorders— 6 to 10 fold increased risk for developing an eating disorder

A decorative header at the top of the slide features a central globe with a blue and white color scheme. The globe is flanked by two rectangular panels, each containing a stylized landscape with green hills, brown ground, and a blue sky. The entire header is set against a dark red background.

# ASSOCIATED PSYCHIATRIC CONDITIONS

- ❖ affective disorders
- ❖ anxiety disorders
- ❖ obsessive-compulsive disorder
- ❖ personality disorders
- ❖ substance abuse.



# PHYSICAL EXAM--anorexia

- ❖ Vital signs to include orthostatics
- ❖ Skin and extremity evaluation
  - ❖ Dryness, bruising, lanugo
- ❖ Cardiac exam
  - ❖ Bradycardia, arrhythmia, MVP
- ❖ Abdominal exam
- ❖ Neuro exam
  - ❖ Evaluate for other causes of weight loss or vomiting (brain tumor)



# PHYSICAL EXAM: bulimia

❖ All previous elements plus:

- ❖ Parotid gland hypertrophy
- ❖ Erosion of the teeth enamel







# LABORATORY ASSESSMENT

- ❖ CBC: anemia
- ❖ Electrolytes, BUN/Cr
- ❖ Mg, PO<sub>4</sub>, Calcium
- ❖ Albumin, serum protein
- ❖ B-HCG
- ❖ Thyroid function tests
- ❖ Serum prolactin
- ❖ FSH
- ❖ Bone density



# DIFFERENTIAL DIAGNOSIS

- ❖ New onset diabetes
- ❖ Adrenal insufficiency
- ❖ Primary depression with anorexia
- ❖ Inflammatory bowel disease
- ❖ Abdominal masses
- ❖ Central nervous system lesions



# COMPLICATIONS

- ❖ Fluid and electrolyte imbalance
  - ❖ Hypokalemia
  - ❖ Hyponatremia
  - ❖ Hypochloremic alkalosis
  - ❖ Elevated BUN
  - ❖ Inability to concentrate urine
  - ❖ Decreased GFR
  - ❖ ketonuria



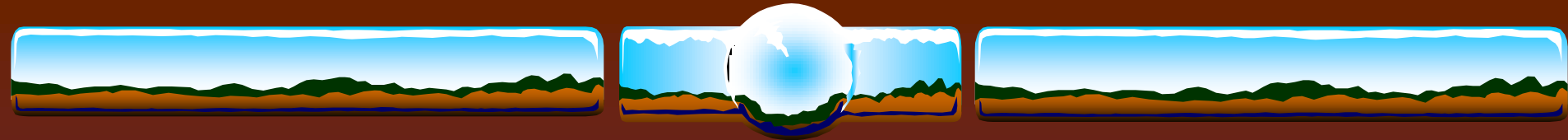
## ❖ Cardiovascular

- ❖ Bradycardia
- ❖ Orthostatic hypotension
- ❖ Dysrhythmias
- ❖ EKG abnormalities
  - ❖ Prolonged QT
  - ❖ T-wave abnormalities
  - ❖ Conduction defects
  - ❖ Low voltage
- ❖ Ipecac cardiomyopathy
- ❖ MFP
- ❖ CHF
- ❖ Pericardial effusion



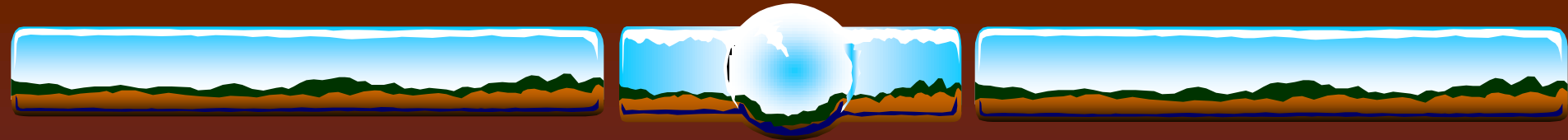
## ❖ Gastrointestinal

- ❖ Constipation
- ❖ Bloody diarrhea
- ❖ Delayed gastric emptying
- ❖ Intestinal atony
- ❖ Esophagitis
- ❖ Mallory-Weiss tears
- ❖ Esophageal or stomach rupture
- ❖ Barrett esophagus
- ❖ Fatty infiltration or necrosis of liver
- ❖ Acute pancreatitis
- ❖ Gallstones
- ❖ Superior mesenteric artery syndrome



## ❖ Dermatologic

- ❖ Acrocyanosis
- ❖ Hypercarotenemia
- ❖ Brittle hair and nails
- ❖ Lanugo
- ❖ Hair loss
- ❖ Russell's sign: calluses over the knuckles
- ❖ Pitting edema



## ❖ Endocrine

- ❖ Growth retardation and short stature
- ❖ Delayed puberty
- ❖ Amenorrhea
- ❖ Low T3 syndrome
- ❖ Partial diabetes insipidus
- ❖ Hypercortisolism

## ❖ Skeletal

- ❖ Osteopenia
- ❖ fractures



## ❖ Hematologic

### ❖ Bone marrow suppression

- ❖ Mild anemia
- ❖ Leukopenia
- ❖ Thrombocytopenia

### ❖ Low ESR

### ❖ Impaired cell-mediated immunity

## ❖ Neurologic

- ❖ Seizures
- ❖ Myopathy
- ❖ Peripheral neuropathy
- ❖ Cortical atrophy





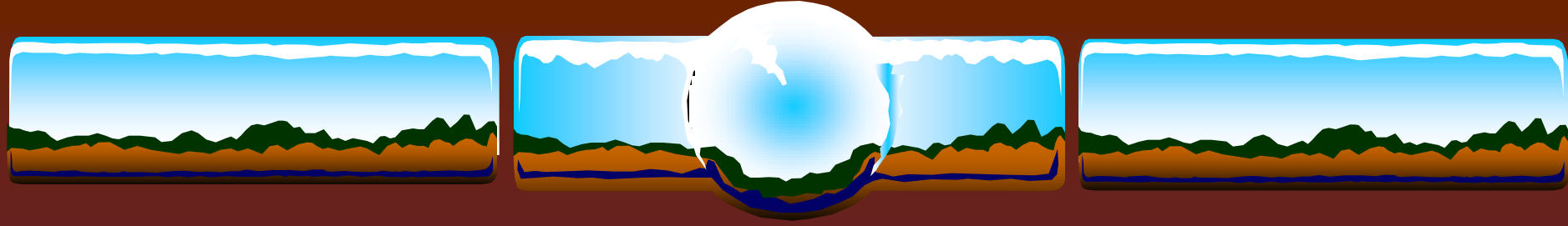
# OSTEOPENIA

- ❖ One of the most severe complications
- ❖ Difficult to reverse
- ❖ Treatment:
  - ❖ Weight gain
  - ❖ 1200-1500 mg/day of elemental calcium
  - ❖ Multivitamin with 400 IU vitamin D
  - ❖ Consider estrogen/progesterone replacement



# AMENORRHEA

- ❖ Secondary amenorrhea affects more than 90% of patients with anorexia
- ❖ Caused by low levels of FSH and LH
- ❖ Withdrawal bleeding with progesterone challenge does not occur due to the hypoestrogenic state
- ❖ Menses resumes with 6 months of achieving 90% of IBW



# TREATMENT AND OUTCOME



# ANOREXIA

- ❖ Cognitive behavioral therapy
  - ❖ Emphasizes the relationship of thoughts and feelings to behavior
  - ❖ Limited efficacy
- ❖ Interdisciplinary care team
  - ❖ Medical provider
  - ❖ Dietician with experience in ED
  - ❖ Mental health professional



# MEDICATIONS

- ❖ Overall, disappointing results
- ❖ Effective only for treating comorbid conditions of depression and OCD
- ❖ Anxiolytics may be helpful before meals to suppress the anxiety associated with eating
- ❖ Case reports in the literature supporting the use of olanzapine



# HOSPITALIZATION

- ❖ Severe malnutrition (< 75% IBW)
- ❖ Dehydration
- ❖ Electrolyte disturbances
- ❖ Cardiac dysrhythmia
- ❖ Arrested growth and development
- ❖ Physiologic instability
- ❖ Failure of outpatient treatment
- ❖ Acute psychiatric emergencies
- ❖ Comorbid conditions that interfere with the treatment of the ED



# NUTRITION

- ❖ Goal: regain to goal of 90-92% of IBW
- ❖ Inpatient treatment varies by facility
  - ❖ Oral liquid nutrition
  - ❖ Nasogastric tube feedings
  - ❖ Gradual caloric increase with “regular” food
  - ❖ Parenteral nutrition rarely indicated



# OUTCOME

- ❖ 50% good outcome
  - ❖ Return of menses and weight gain
- ❖ 25% intermediate outcome
  - ❖ Some weight regained
- ❖ 25% poor outcome
  - ❖ Associated with later age of onset
  - ❖ Longer duration of illness
  - ❖ Lower minimal weight
  - ❖ Overall mortality rate: 6.6%





# BULIMIA

- ❖ Cognitive behavioral therapy is effective
- ❖ Pharmacotherapy—high success rate
  - ❖ Fluoxetine—studies reveal up to a 67% reduction in binge eating and a 56% reduction in vomiting
  - ❖ TCAs
  - ❖ Topiramate—reduced binge eating by 94% and average wt. loss of 6.2 kg
  - ❖ Ondansetron, 24 mg/day



# BINGE EATING DISORDER

- ❖ Cognitive behavioral therapy
- ❖ Pharmacotherapy



# The Female Athlete's Triad

- ❖ The Triad

- ❖ Eating Disorders

- ❖ Stress Fractures

- ❖ Amenorrhea

- ❖ At risk

- ❖ Appearance Related Sports

- ❖ High Performance Sports



# The Female Athlete's Triad

What to look for:

- ❖ Weight
- ❖ Heart Rate of 40-50
- ❖ Hypotension
- ❖ Hypothermia
- ❖ Parotid swelling
- ❖ Poor dentition
- ❖ Overuse injuries, especially stress fractures



# The Female Athlete's Triad

Treatments—multidisciplinary effort

- ❖ Estrogen Replacement
  - ❖ 3 years post-menarche and older than 16 years old
  - ❖ Or, if history of stress fracture
- ❖ Decrease energy expenditure
- ❖ Nutritional consultation
- ❖ Calcium with vitamin D
- ❖ Psychological counseling