

# Atrophy

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# Atrophy

Decrease of the size of organs, accompanied by decreased function

Physiologic atrophy = involution (thymus, breast, ovaries)

## Local:

- **slow** narrowing of arteries
- loss of trophic effects
- inactivity (muscles, bones)
- loss of hormonal effects (adrenal)

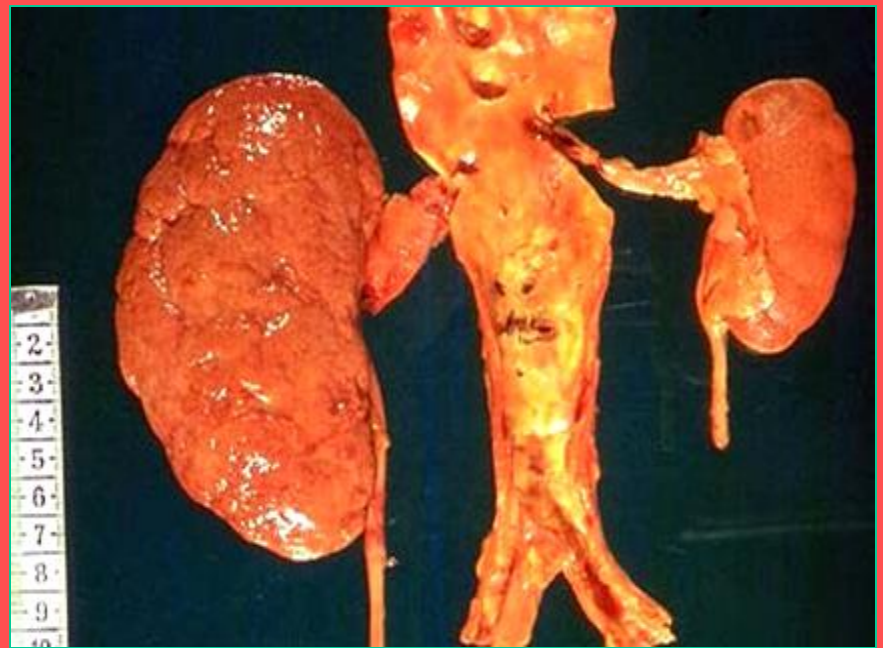
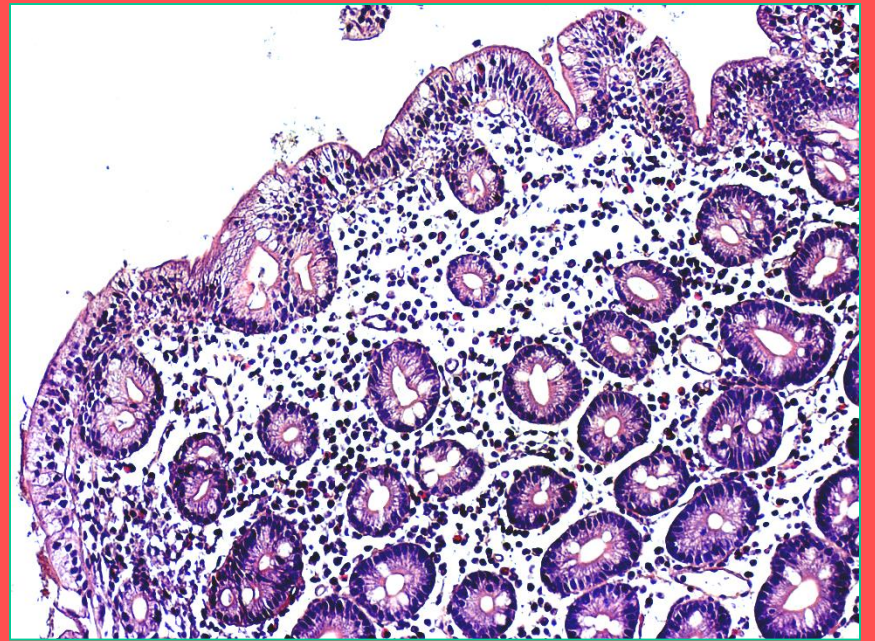
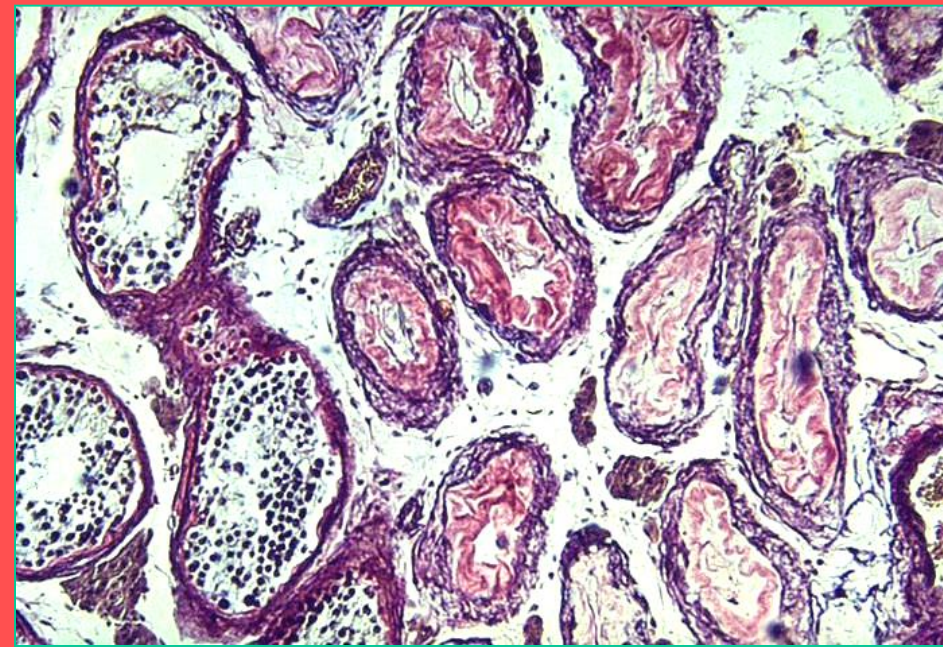
## **side effects of steroids!**

- compression atrophy
- irradiation
- vitamin B12 deficiency (tongue)
- prolonged chronic inflammation (gastritis)
- degenerative processes (brain)

## Generalized:

- senile atrophy
- decreased food supply  
(inanition, malabsorption,  
esophageal tumors)
- generalized atherosclerosis
- tumorous cachexia
- hypophysis-insufficiency
- anorexia nervosa

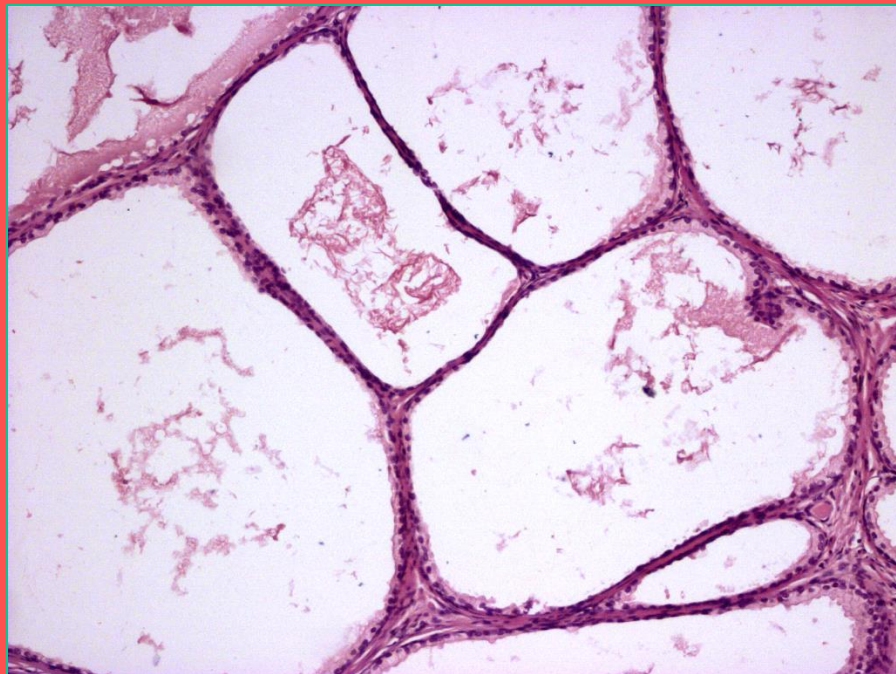






# Conditions following atrophy

- **function loss**
- **regeneration: after cessation of the cause**
- **pseudometaplasia (due to compression; e.g. flattening of columnar epithelium)**
- **space replace (fat, liquor)**
- **pseudohypertrophy: overproliferation of other tissues**
- **compensatory hypertrophy: (paired organs)**



# Osteoporosis

(loss of both the organic and inorganic material)

## Primary

- senile
- postmenopausal

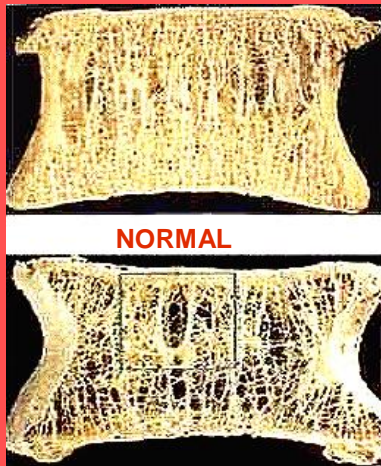
## Diffuse

## Secondary

- glycocorticoids
- hypogonadism
- malabsorption
- chr. alkoholism

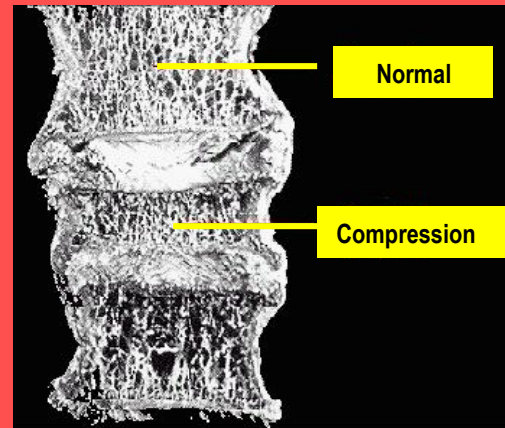
## Local

(immobilisation)



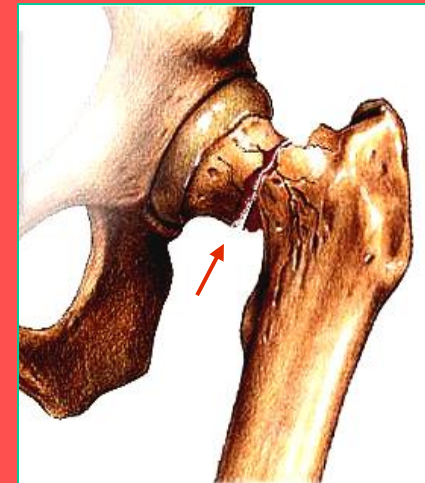
NORMAL

POROTIC



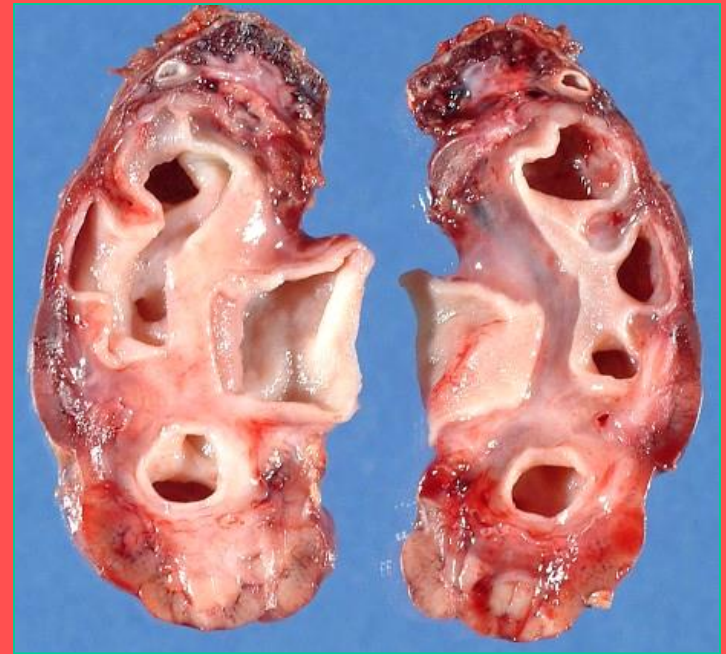
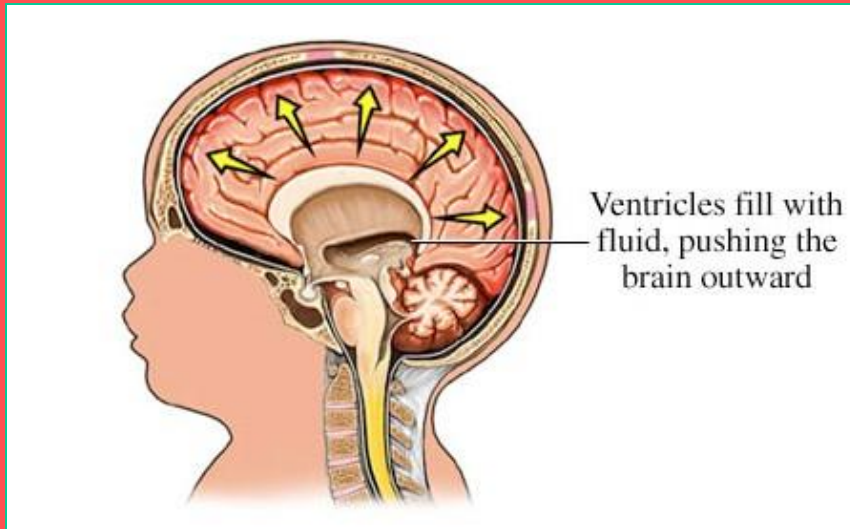
Normal

Compression



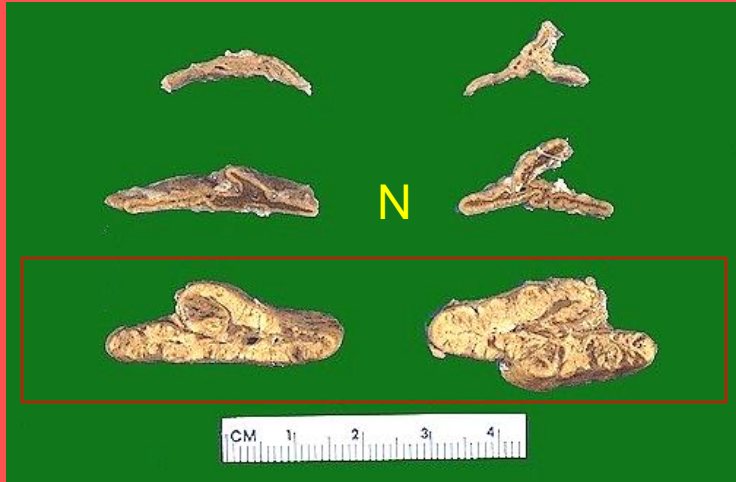
Pathological fracture

# Hydrocephalus, hydronephrosis





# Cushing-syndrome



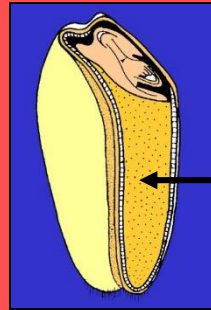


# Celiac disease

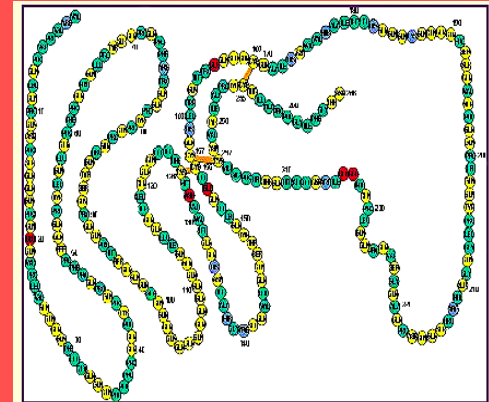
(gluten-sensitive enteropathy)

genetic disposition + gluten exposition

wheat



starch + gluten



# Celiac disease

NORMAL

4

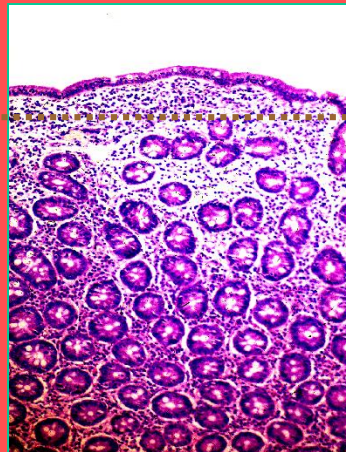


villi



1

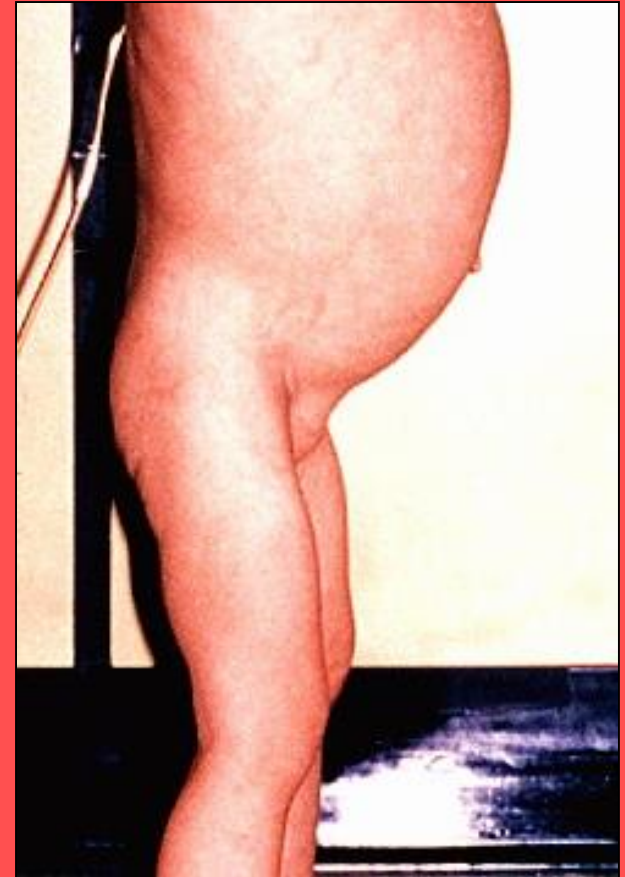
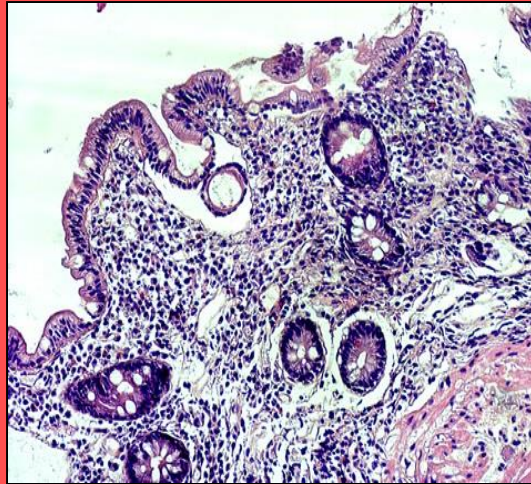
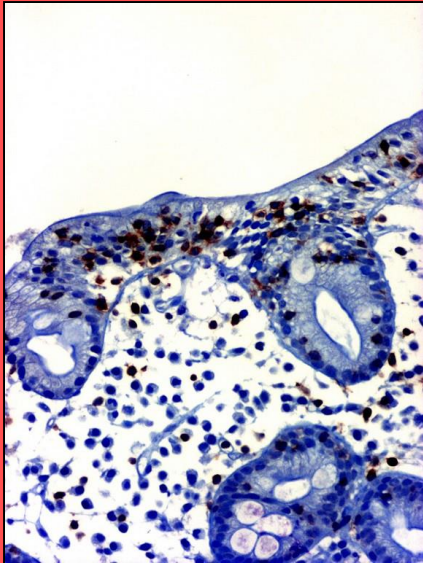
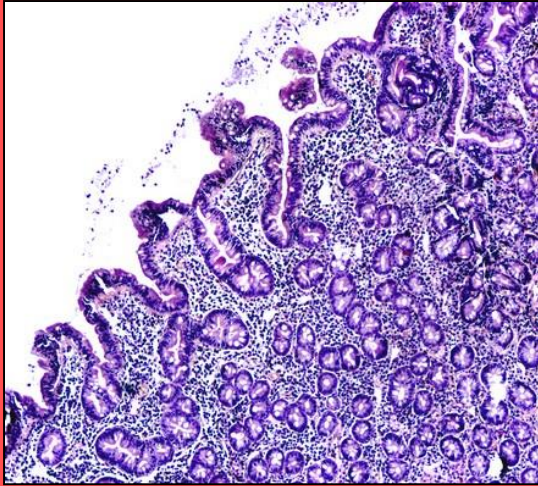
Lieberkühn-crypts



CELIAC DISEASE



# Celiac disease



**MALABSORPTION**



# Alzheimer's disease

- Most common cause of senile dementia
- Slowly progressive accumulation of a toxic, abnormal peptide  
( $A\beta$ ,  $\beta$ -amyloid)
- Interference with neurotransmission
- Neuronal destruction

