

HM/CH-1/L-6

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# MORPHOLOGY OF CELL INJURY

# MORPHOLOGIC FORMS OF CELL INJURY

## MECHANISMS

1. Reversible cell injury
2. Deranged cell metabolism
3. Irreversible cell injury
4. Programmed cell death
5. Residual effects
6. After-effects

## NOMENCLATURE

1. Retrogressive changes (degenerations)
2. Intracellular accumulations
3. Cell death-necrosis
4. Apoptosis
5. Subcellular alterations
6. Gangrene, pathologic calcification

# DERANGED METABOLISM: INTRACELLULAR ACCUMULATION

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- *Accumulation of constituents of normal cell metabolism:*  
fat, proteins, CH
- *Accumulation of abnormal substances:*  
storage diseases
- *Accumulation of pigments:*  
endogenous, exogenous

# INTRACELLULAR ACCUMULATION OF FAT

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## FATTY CHANGE/STEATOSIS

### ■ Etiology of fatty liver:

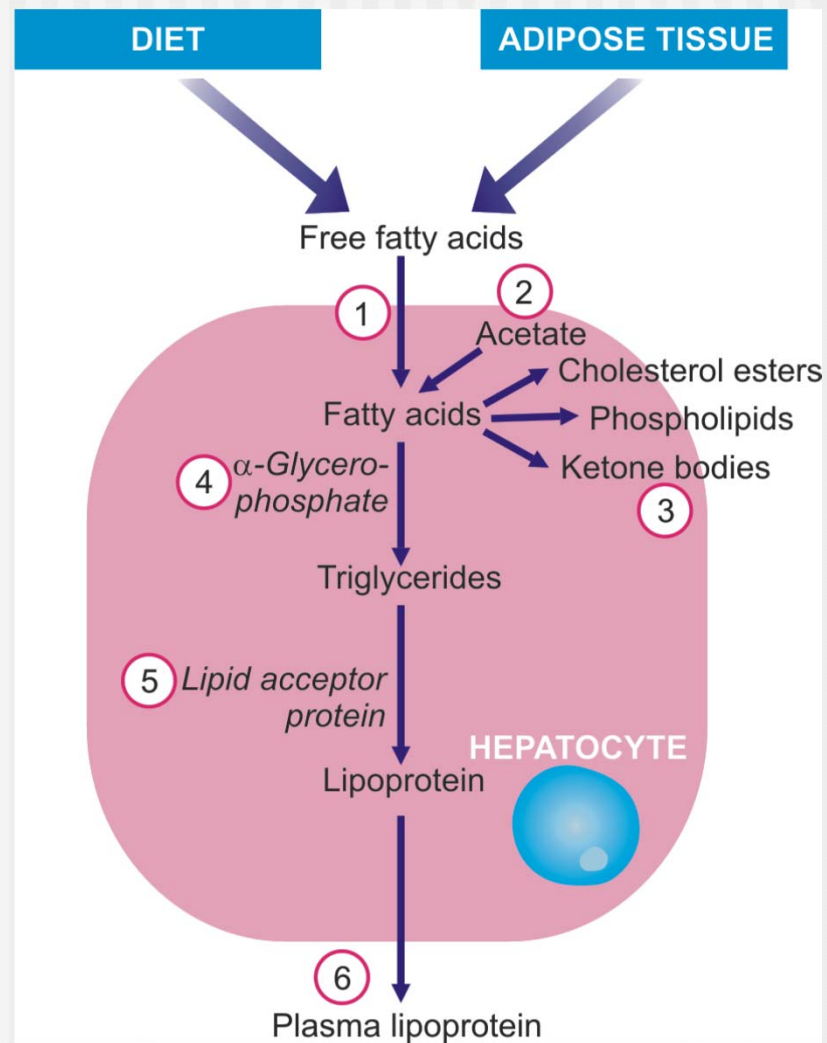
- Conditions with excessive fat

(obesity, DM, hyperlipidaemia)

- Liver cell damage

(Alcoholism, ch diseases, PCM, pregnancy, hypoxia, hepatotoxins, drugs, Reye's syndrome)

# Pathogenesis of fatty liver



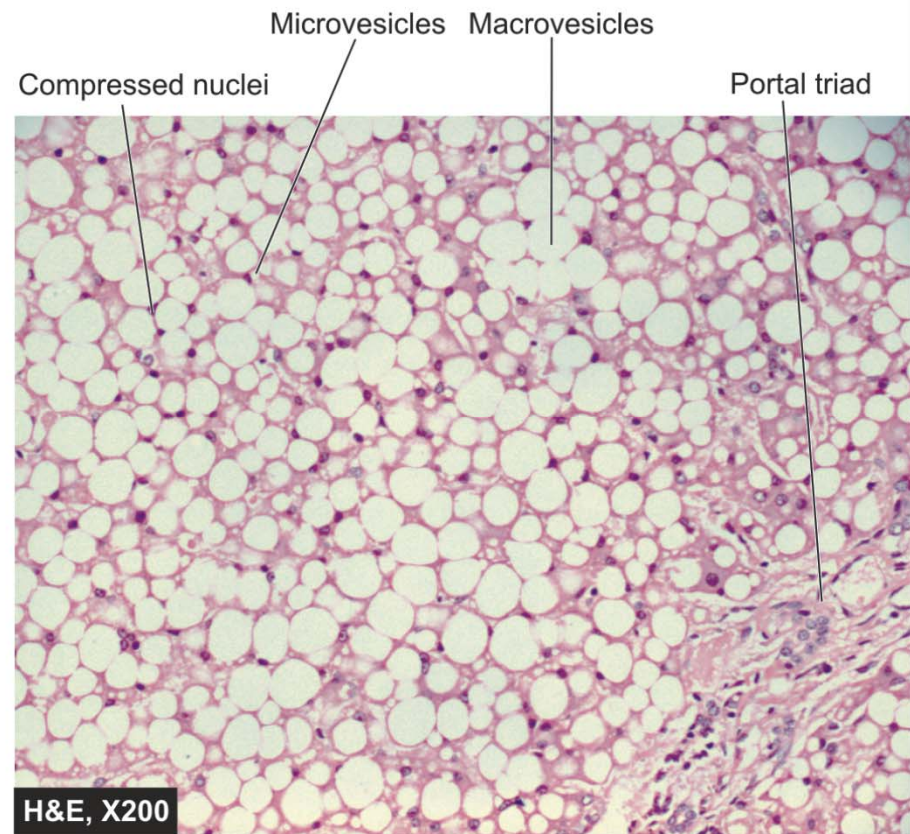
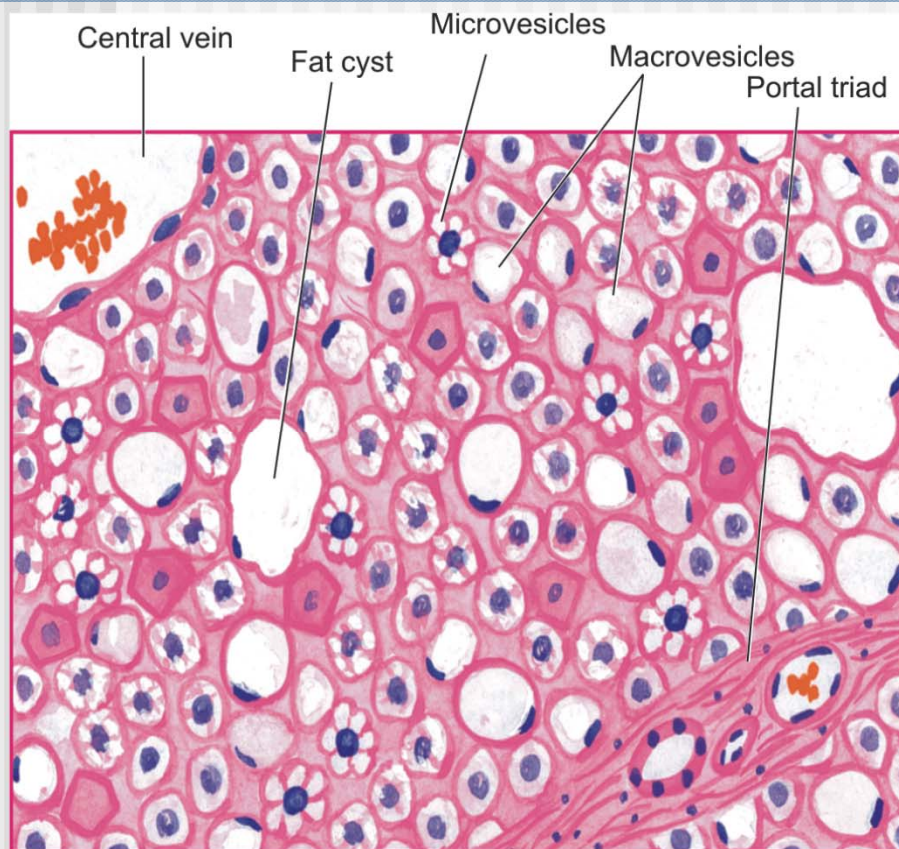


# Morphologic changes

■ GA:



# ME:



# Other fat accumulations

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- INTRACELLULAR DEPOSITS OF CHOLESTEROL

- Atherosclerosis
- Xanthoma, xanthelasma

- STROMAL FATTY INFILTRATION

- Heart
- Pancreas



# INTRACELLULAR ACCUMULATION OF PROTEINS

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- Proteinuria
- Russell's bodies
- Alpha-1 anti-trypsin deficiency
- Mallory's hyaline

# INTRACELLULAR ACCUMULATION OF GLYCOGEN

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- Diabetes mellitus
- Glycogen storage conditions