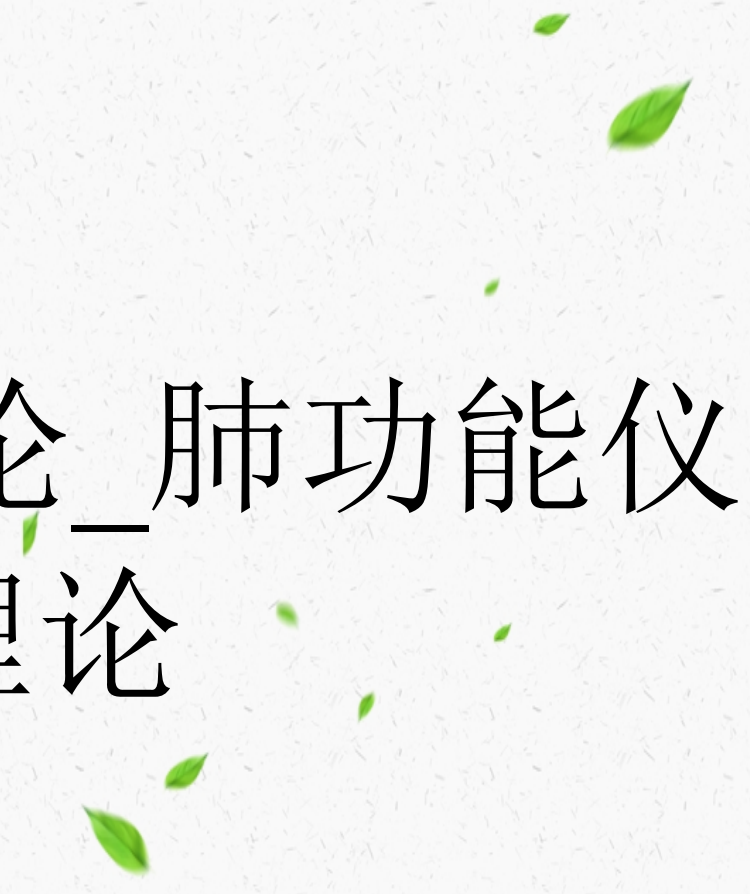
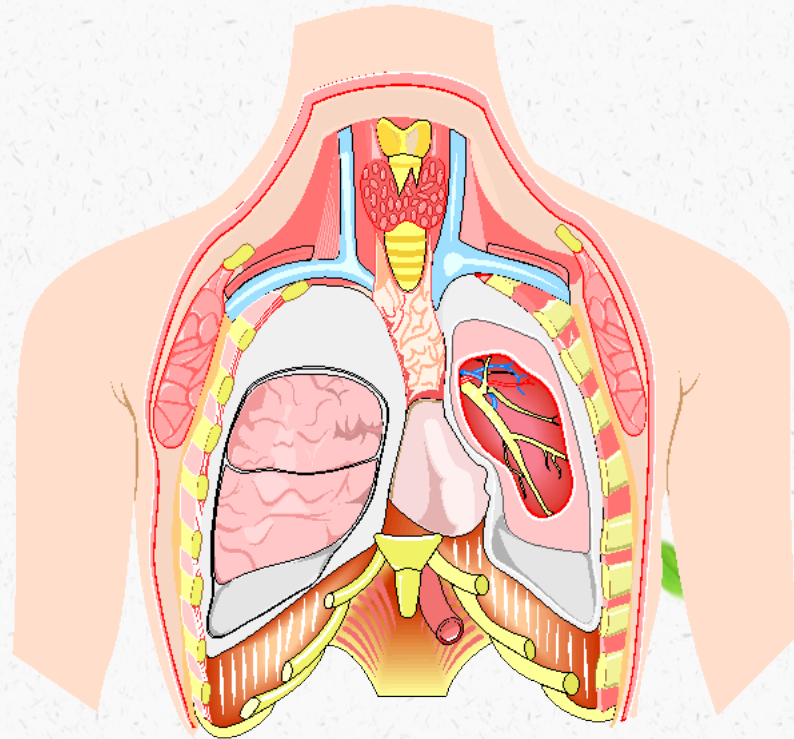


肺功能基础理论_肺功能仪
基础理论

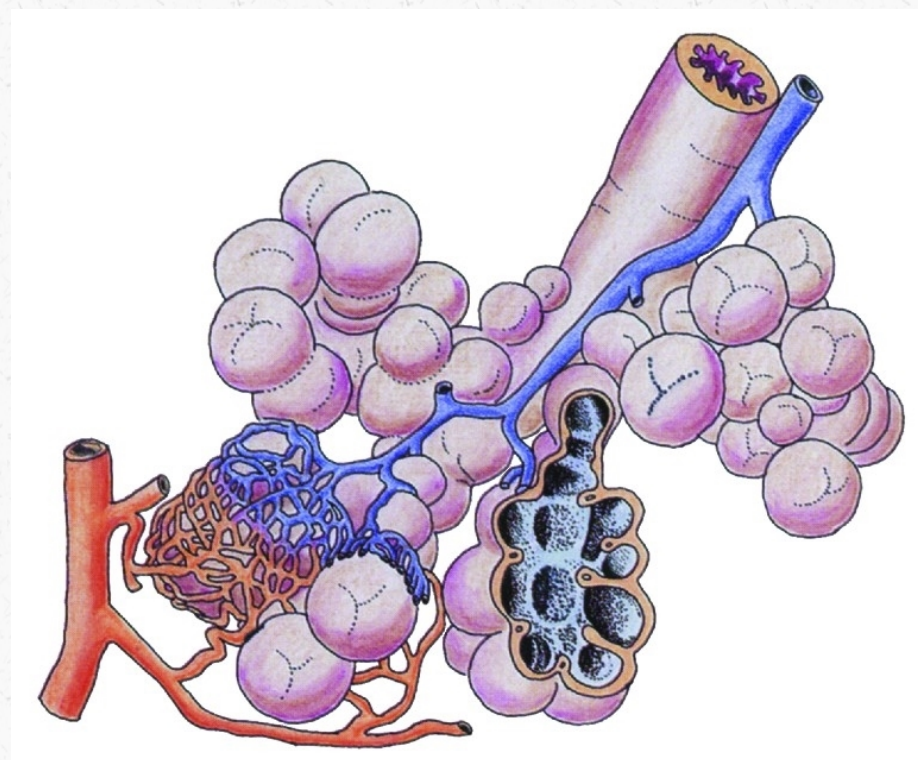
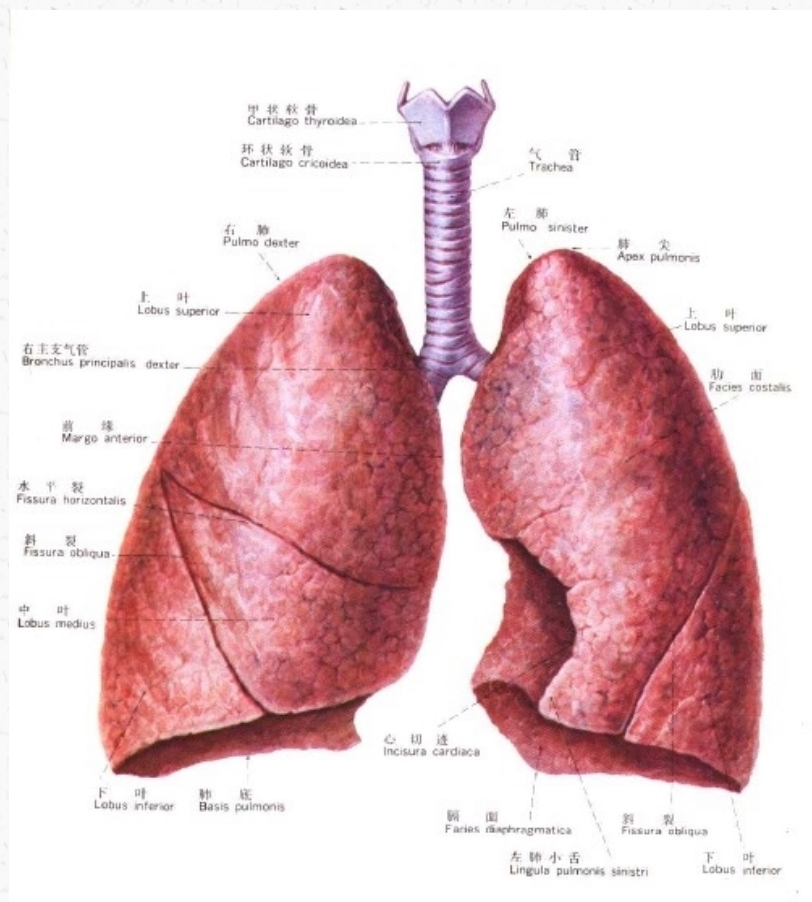


肺功能基本理论知识

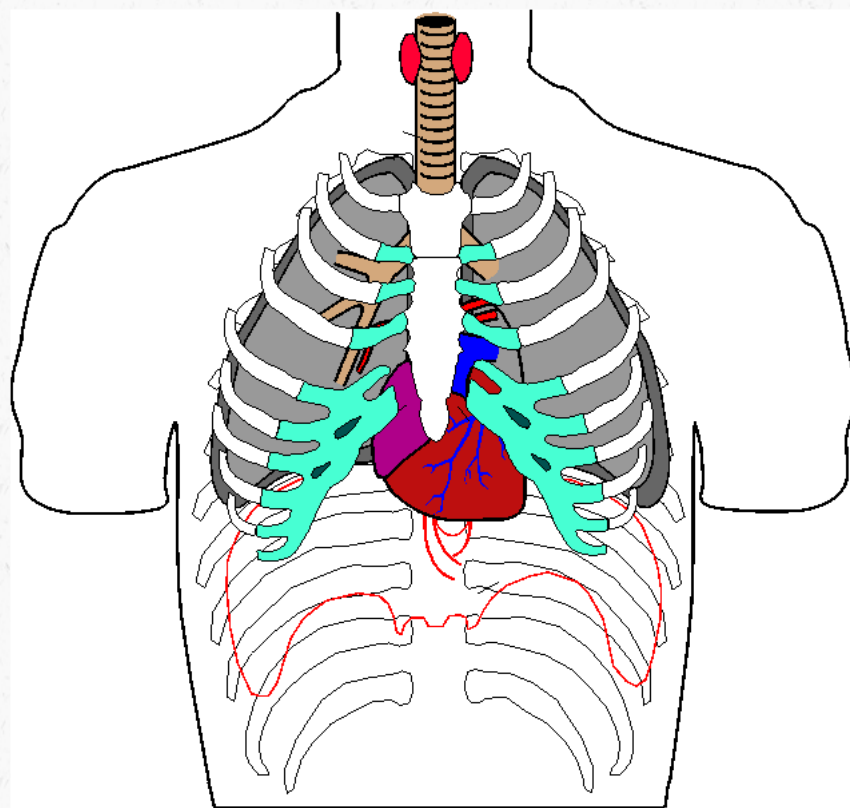
hailangbaiyun2



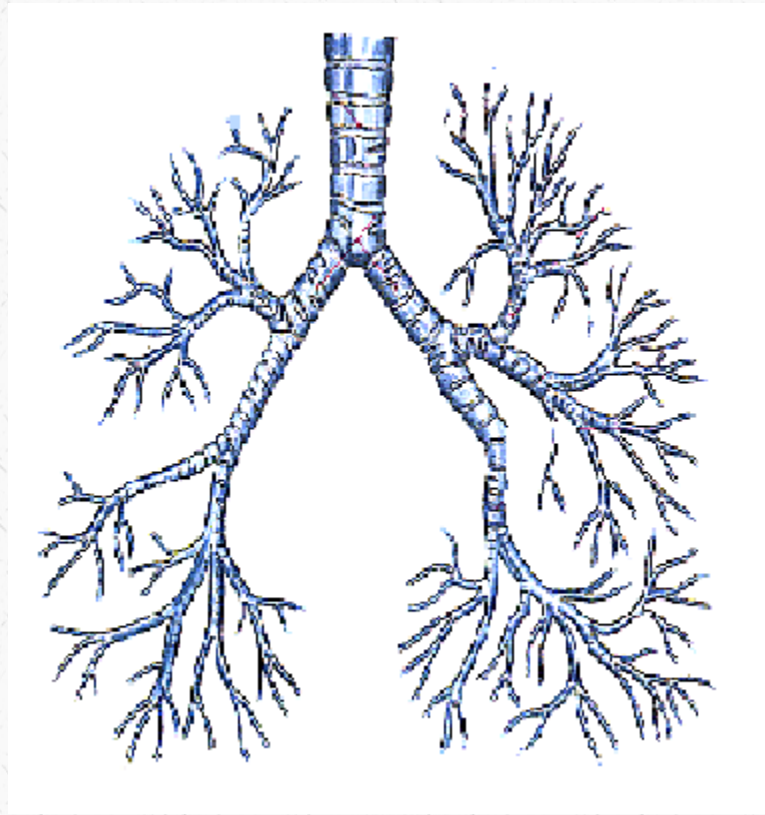
肺的解剖结构



胸廓



支气管树



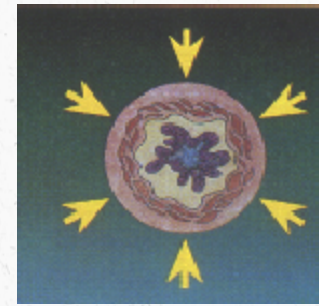
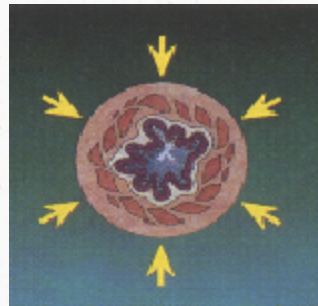
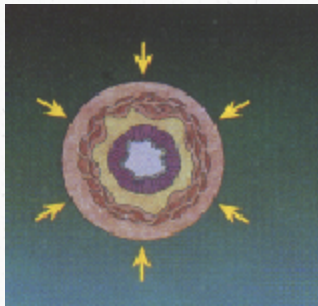
肺的主要生理功能



通气
换气

影响通气的病理信息

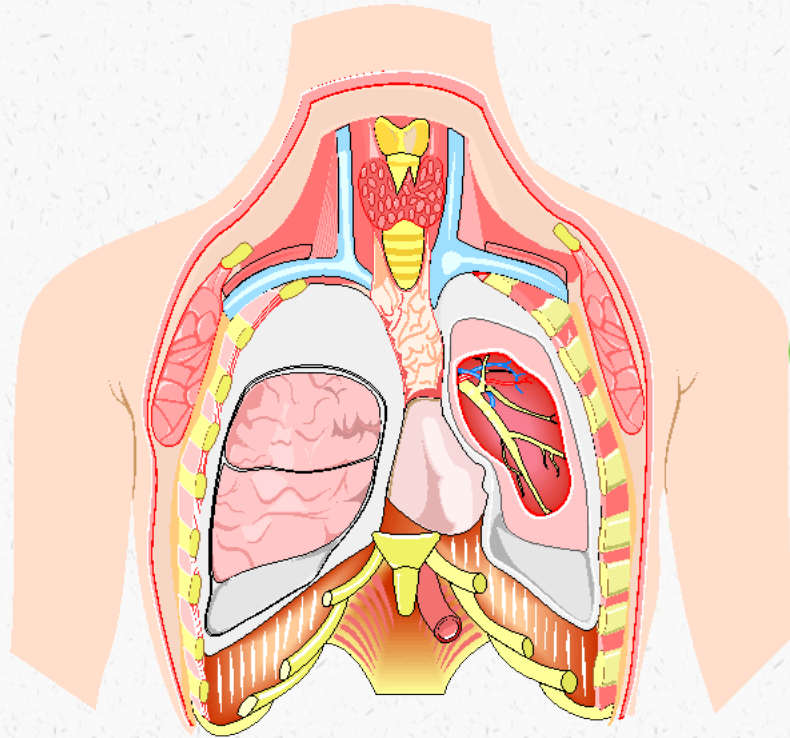
阻塞型肺疾病



特点：气道狭窄，呼吸阻力增加，呼吸流速下降

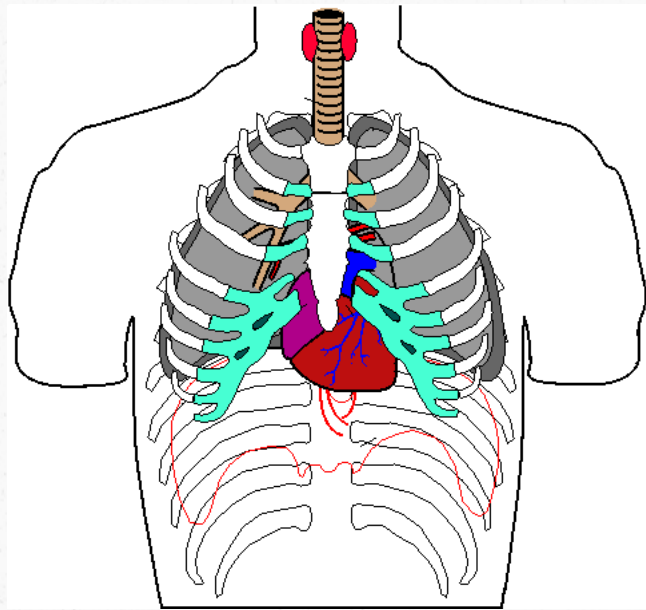
影响通气的病理信息

限制型肺疾病



特点：肺扩张受限，肺顺应性差，肺容量降低

呼吸力学---呼吸驱动力检查



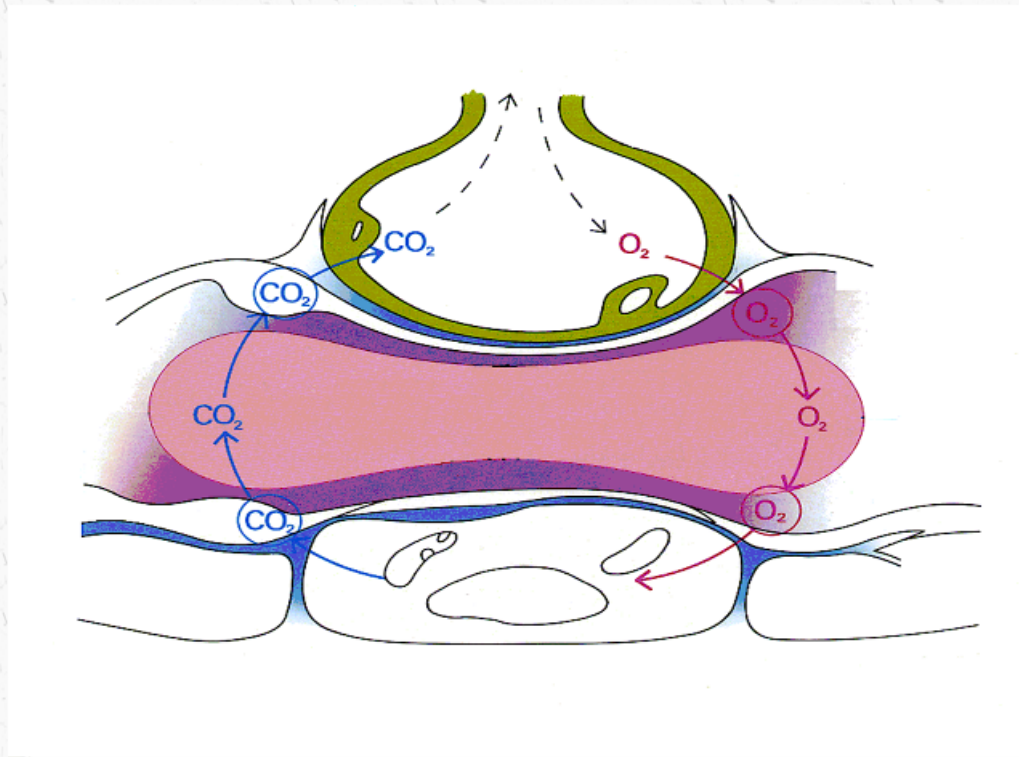
呼吸肌力P0.1

最大吸气压、最大呼气压

大脑呼吸中枢驱动力

动静态肺顺应性

换气功能（弥散功能）



指氧通过肺泡膜、肺间质、血管膜、血浆，最后和血红蛋白结合的速度。重要参数：**DLCO**，**DLCO/VA**

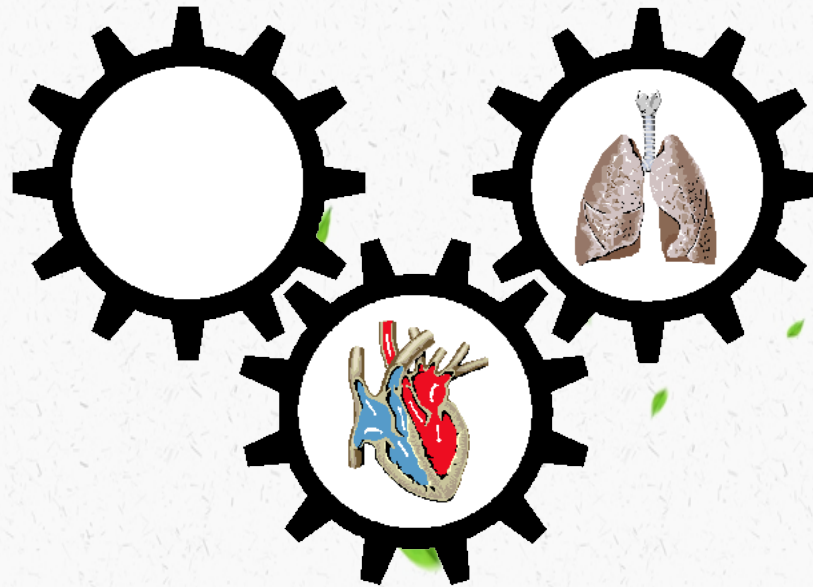
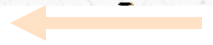
氧在体内的运输

运动心肺功能---气体代谢测试

CO₂



O₂



运动心肺藕联的概念

运动心肺测试的目的

无氧阈

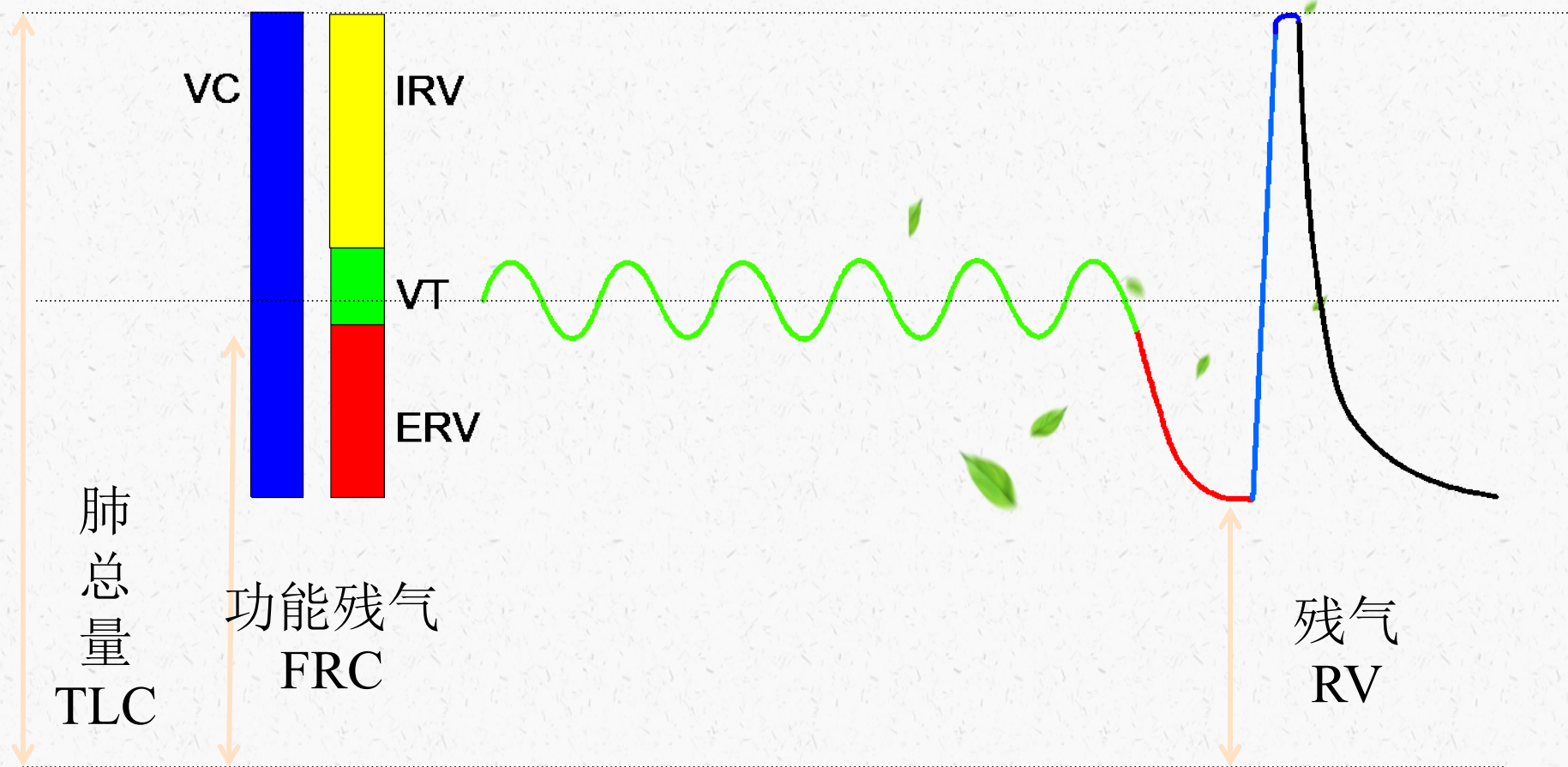
判断运动能力的受限是来自：

- 通气限制
- 换气限制
- 通气血流灌注失调
- 心功能限制
- 血液循环限制
- 做功肌肉限制

常规肺功能检查的几大项

- **Changes** (包括气道反应性)
- 弥散功能
- 气体分布
- 血液灌注
- 肺容量
- 气道阻力和肺顺应性
- 呼吸力学

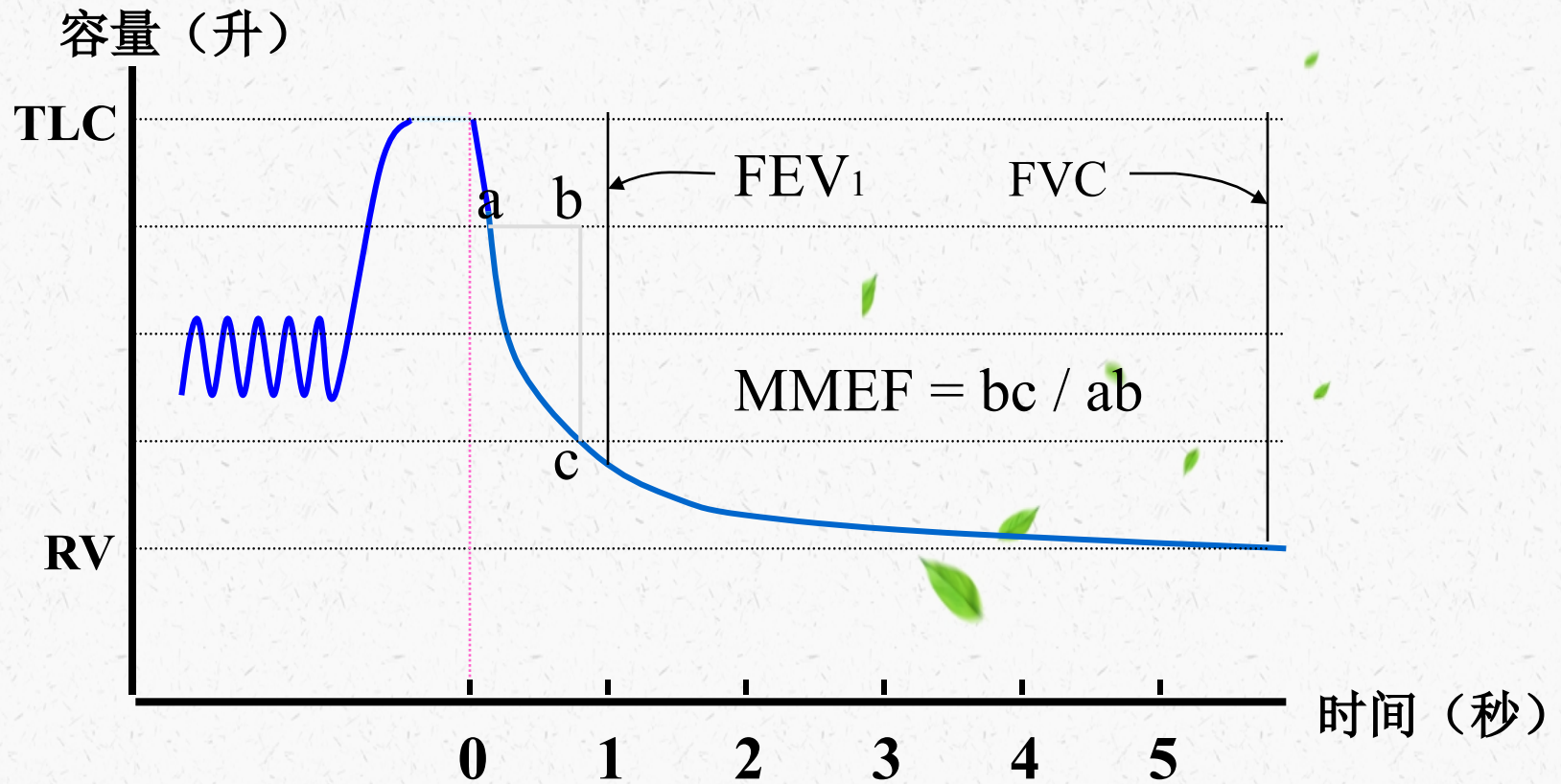
静态肺参数



静态肺参数

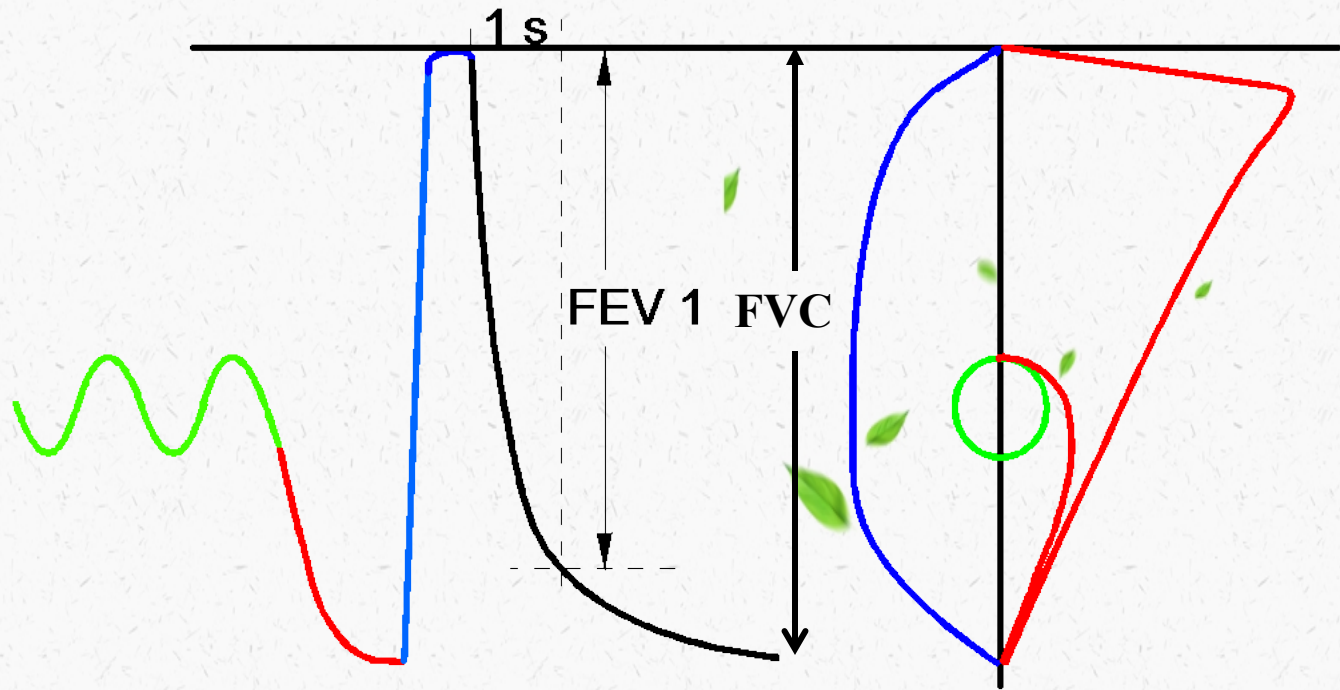
- VT 潮气量
- BF 呼吸频率
- MV 静息每分通气量
- VCmax 肺活量
- ERV 补呼气量
- IRV 补吸气量
- IC 深吸气量= $VT+IRV$
- FRC 功能残气
- RV 残气
- TLC 肺总量

用力时间肺活量曲线

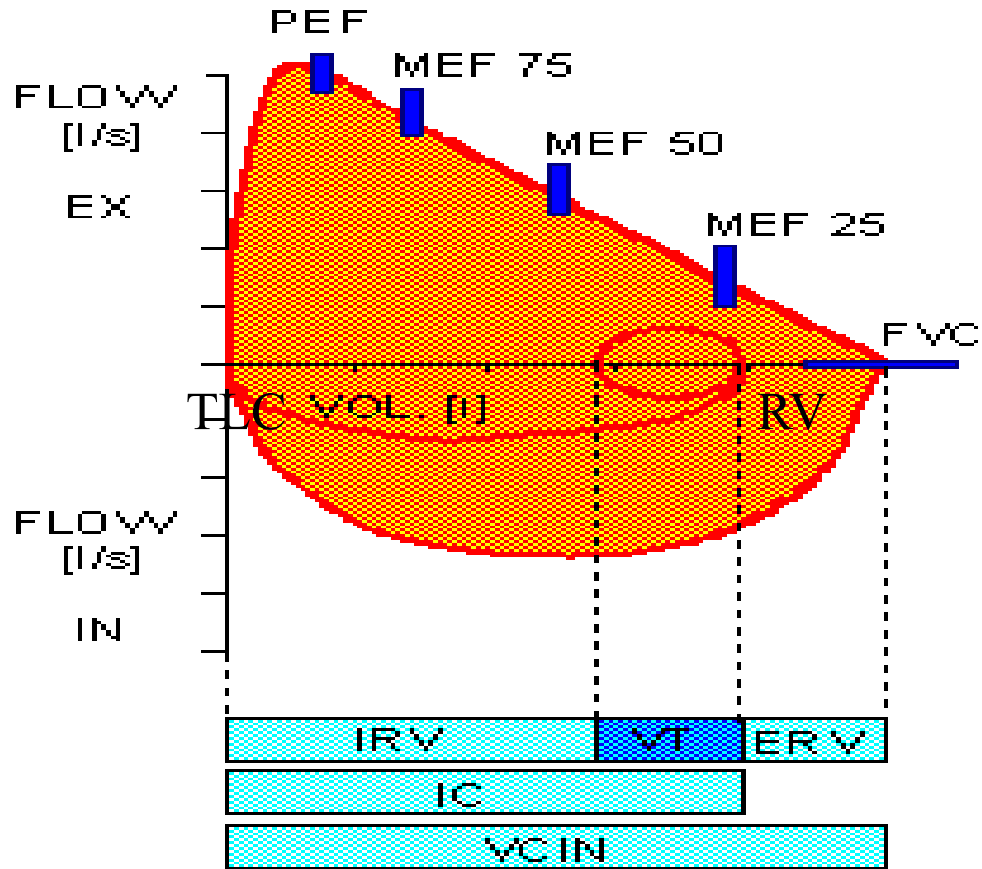


流速容量环

Flow - Volume Loop



流速容量环参数的定义



动态肺参数 (1)

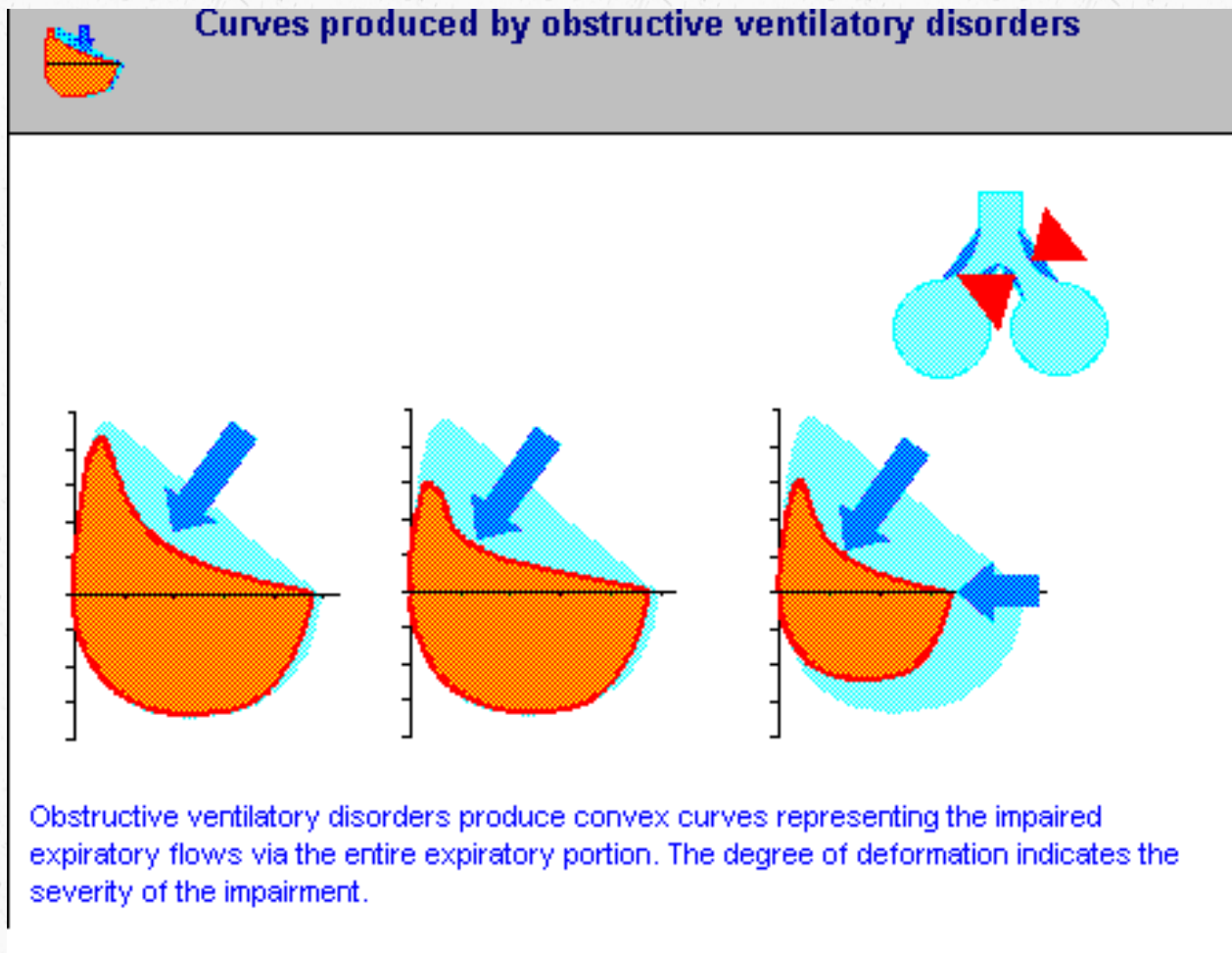
- FVC 用力肺活量
- FEV1 一秒量
- FEV1/F 一秒率

- MVV 每分最大通气量

动态肺参数 (2)

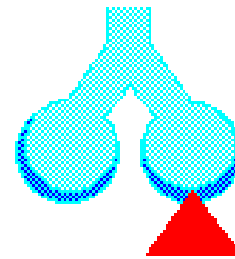
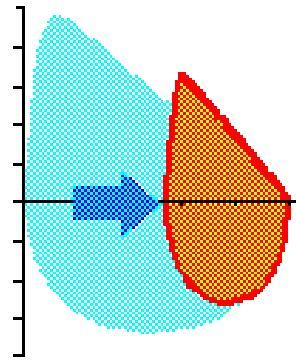
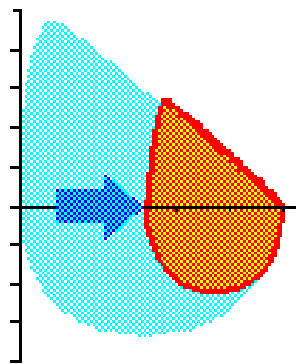
- PEF 峰流速
- FEF25 25%呼气流速, MEF75
- FEF50 50%呼气流速, MEF50
- FEF75 75%呼气流速, MEF 25
- MMEF 中段呼气流速
- PIF 吸气峰流速
- FIV1 吸气一秒量

阻塞型通气功能障碍



限制型通气功能障碍

Curves produced by restrictive ventilatory disorders



Curves produced by restrictive ventilatory disorders have an almost normal shape. However, lung volume (VC) and flows (MEF) are considerably reduced.

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