

Upper thorax (ribs 1-6)

There is **pump handle** movement on inspiration. Mostly anteroposterior expansion - minimal lateral expansion

Lower thorax (ribs 7-10)

In quiet inspiration the costal margins separate producing lateral and slight upwards movement of the whole lower thorax. In forced inspiration there is an additional eversion of the last few ribs by the diaphragm pulling on them. This is likened to the lifting of a bucket handle (not illustrated)

RIB MOVEMENTS IN RESPIRATION

