cell organel function diseas cell fundament unit life like miniatur factori teem special compart call organel organel uniqu structur function work harmoni maintain cellular health perform vital task understand organel role crucial malfunct disrupt lead variou diseas nucleu `` control center `` cell hous genet blueprint dna wrap chromosom dna dictat cell 's structur function diseas like syndrom aris chromosom abnorm mutat specif gene caus cystic fibrosi faulti protein disrupt mucu product lung powerhous cell mitochondrion cellular respir take place convert glucos usabl energi atp fuel cellular process mitochondri dysfunct link sever neurodegen diseas like parkinson 's alzheim 's energi deplet disrupt nerv cell function endoplasm reticulum er network membran respons protein synthesi modif rough er ribosom attach protein assembl occur smooth er focus lipid fat product detoxif disrupt protein fold within er lead disord like cystic fibrosi huntington 's diseas golgi apparatu often refer `` packag ship depart `` modifi sort packag protein lipid synthes er packag molecul transport within cell export variou function problem golgi apparatu function lead lysosom storag diseas malfunct enzym accumul within cell caus cellular damag lysosom cell 's `` wast dispos unit `` membrane-bound sac contain digest enzym break damag organel wast product foreign invad lysosom disord aris enzym defect lead buildup cellular debri seen tay-sach diseas fatal neurolog disord cell membran phospholipid bilay act gatekeep control entri exit molecul also play role cell commun signal disrupt cell membran structur function contribut variou diseas includ cystic fibrosi sickl cell anemia final organel uniqu specif cell type chloroplast found plant cell captur sunlight convert energi photosynthesi dysfunct chloroplast impair plant 's abil produc food lead stunt growth conclus cell organel intric machineri keep cell function understand divers role vital comprehend diseas aris cellular level studi malfunct organel contribut patholog research develop target therapi combat wide rang diseas improv human health