$$egin{aligned} &\lim_{x o 0} rac{\sqrt{1+x\cos x}-\sqrt{1+x}}{x^3} \ &= \lim_{x o 0} rac{x(\cos x-1)}{\left(\sqrt{1+x\cos x}+\sqrt{1+x}
ight)x^3} \ &= \lim_{x o 0} rac{x\cdot\left(-rac{1}{2}x^2
ight)}{2x^3} \ &= -rac{1}{4} \end{aligned}$$