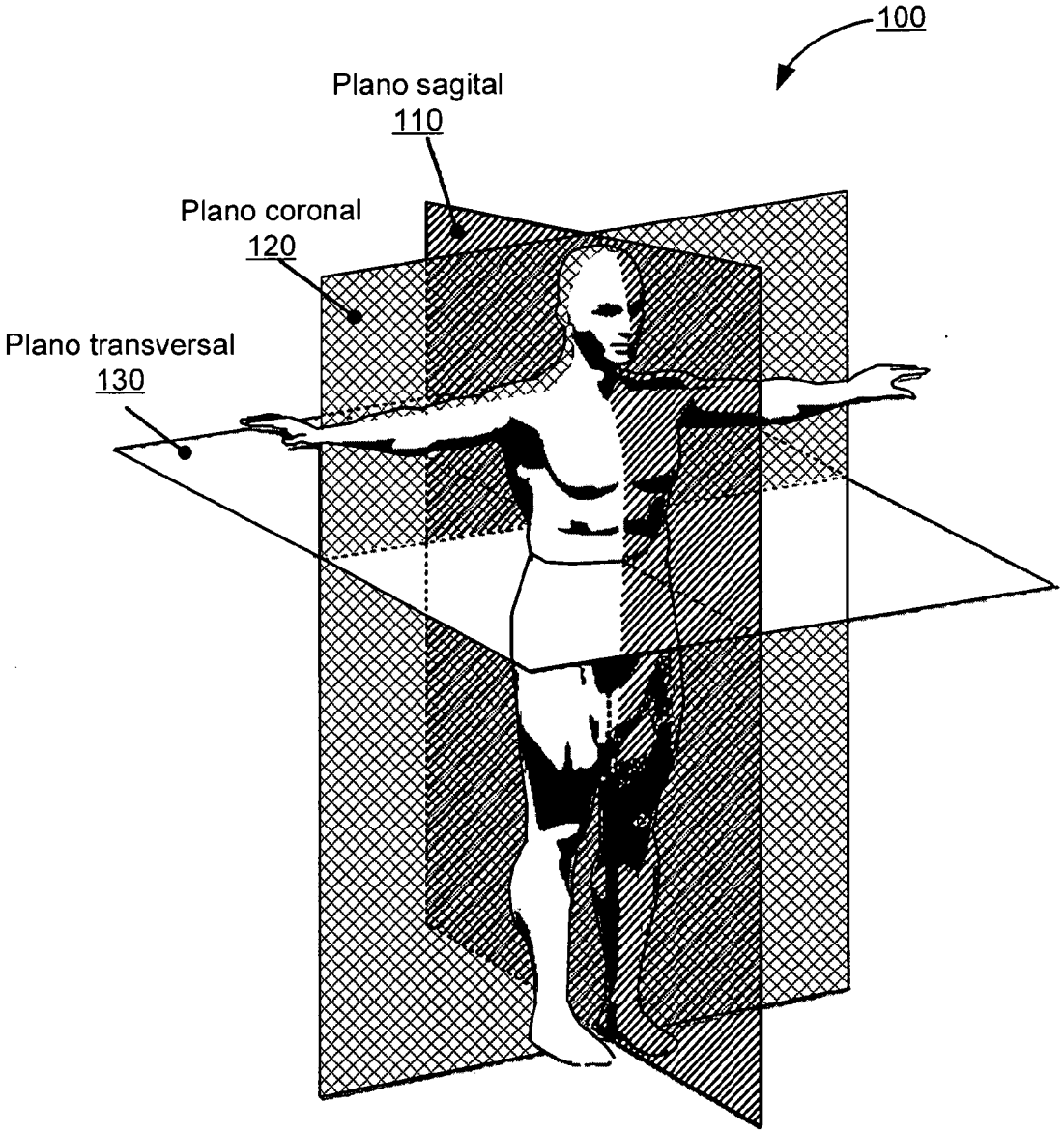

100
Plano sagital
110
Plano coronal
120
Plano transversal
130

FIG. 1

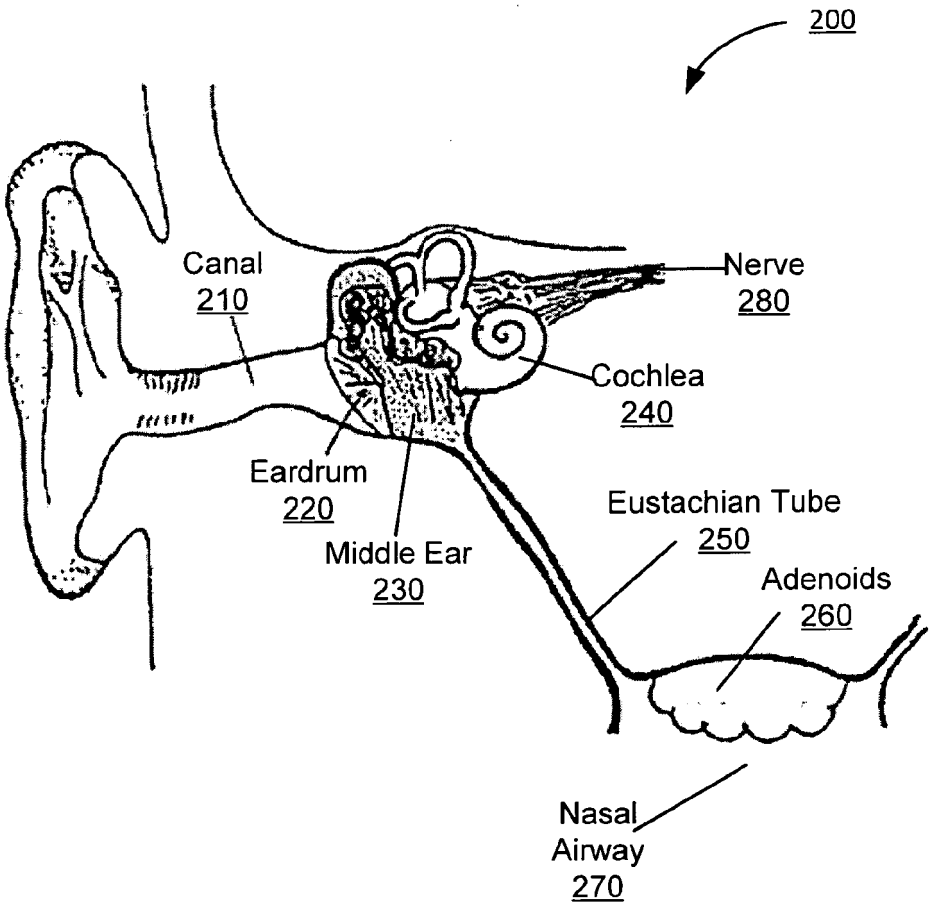

200
Canal
210
Nerve
280
Cochlea
240
Eardrum
220
Middle Ear
230
Eustachian Tube
250
Adenoids
260
Nasal
Airway
270

FIG. 2

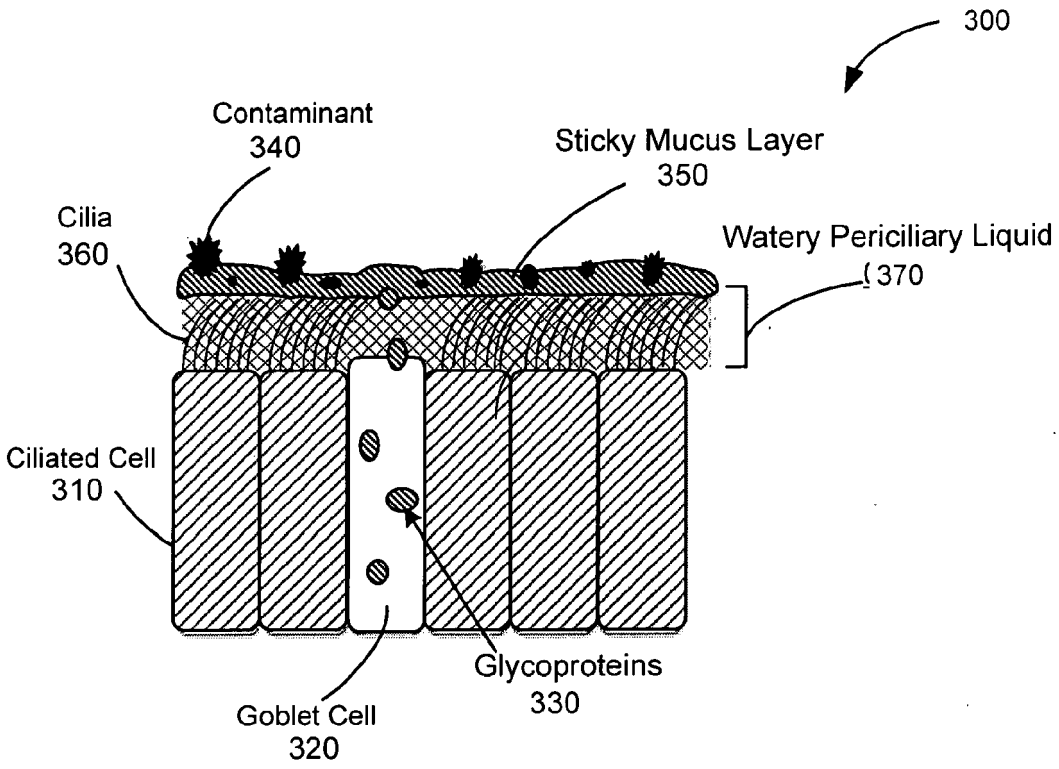

300
Contaminant
340
Sticky Mucus Layer
350
Cilia
360
Watery Periciliary Liquid
370
Ciliated Cell
310
Glycoproteins
330
Goblet Cell
320

FIG. 3

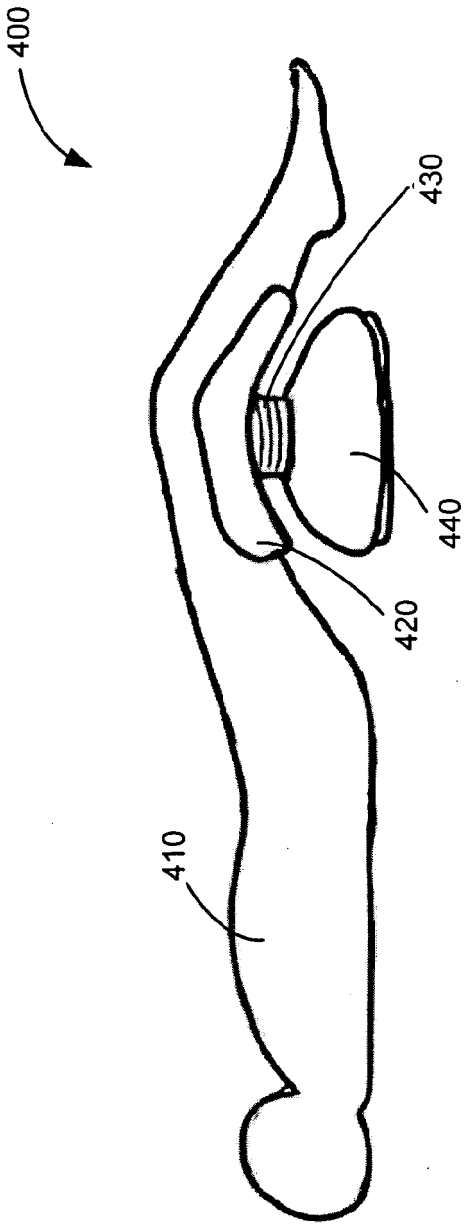


FIG. 4

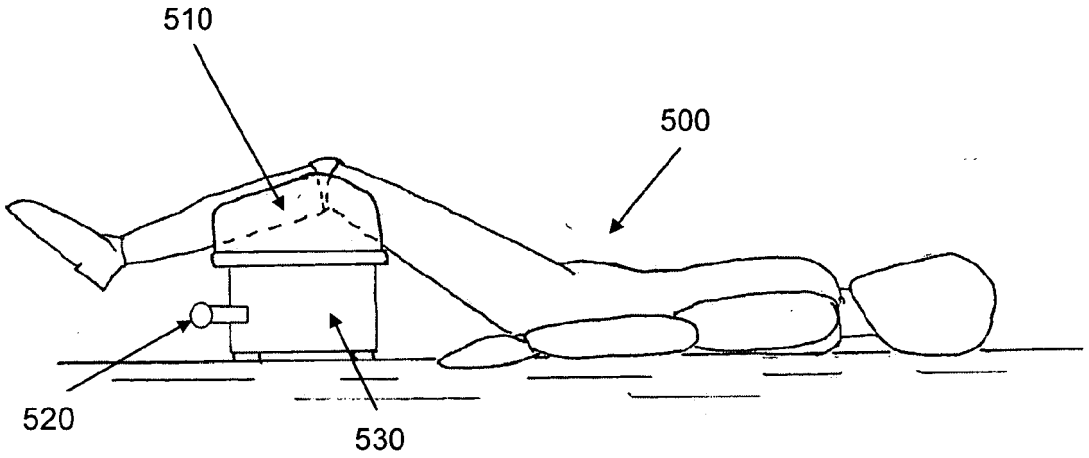


FIG. 5A

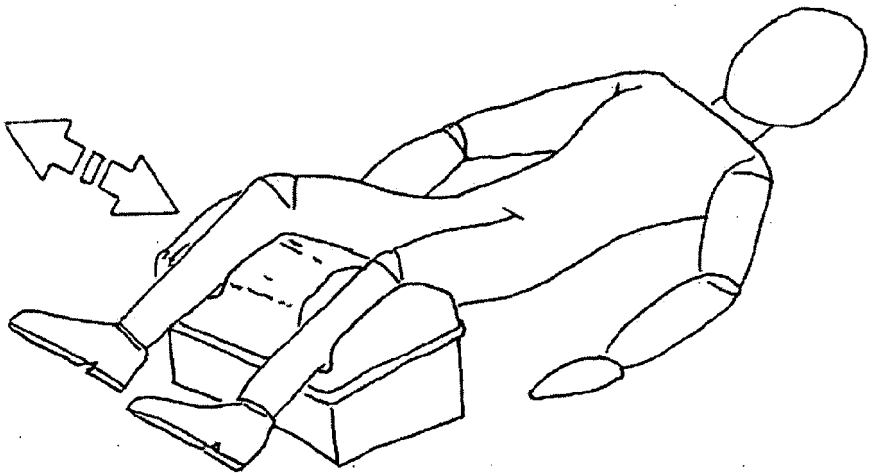


FIG. 5B

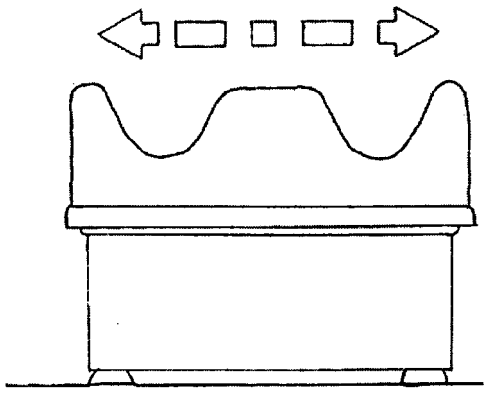
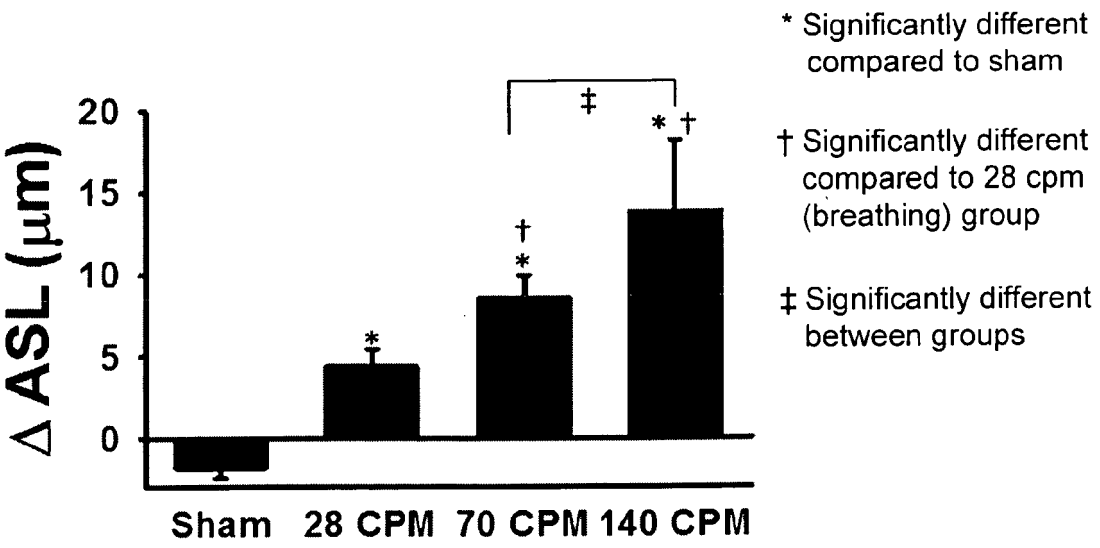
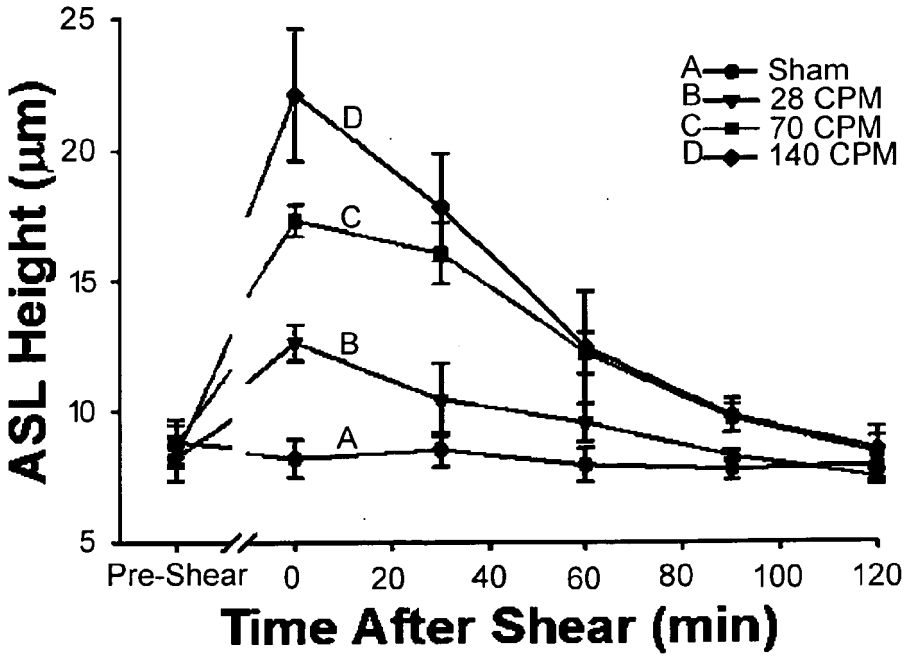


FIG. 5C



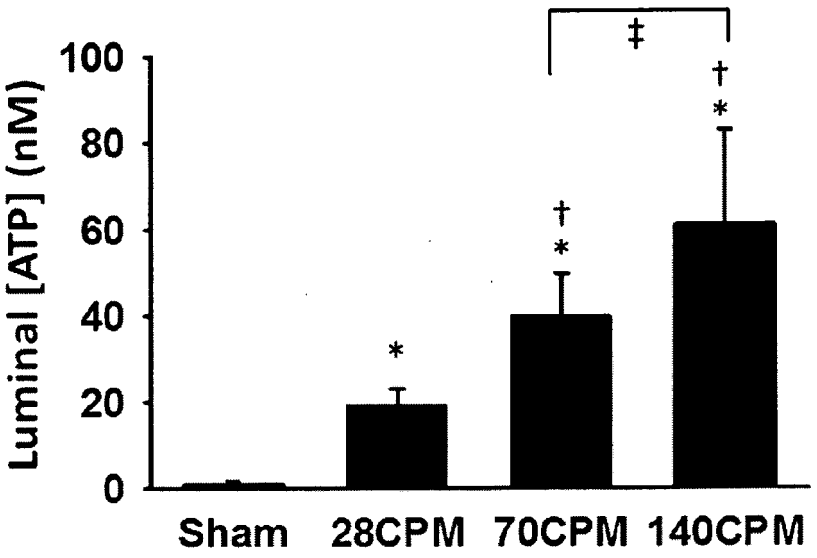
Change in ASL height between pre-shear and immediately after cultures were removed from shear stress at frequencies of 28, 70 and 140 CPM compared to sham cultures (no shear).

FIG. 6A



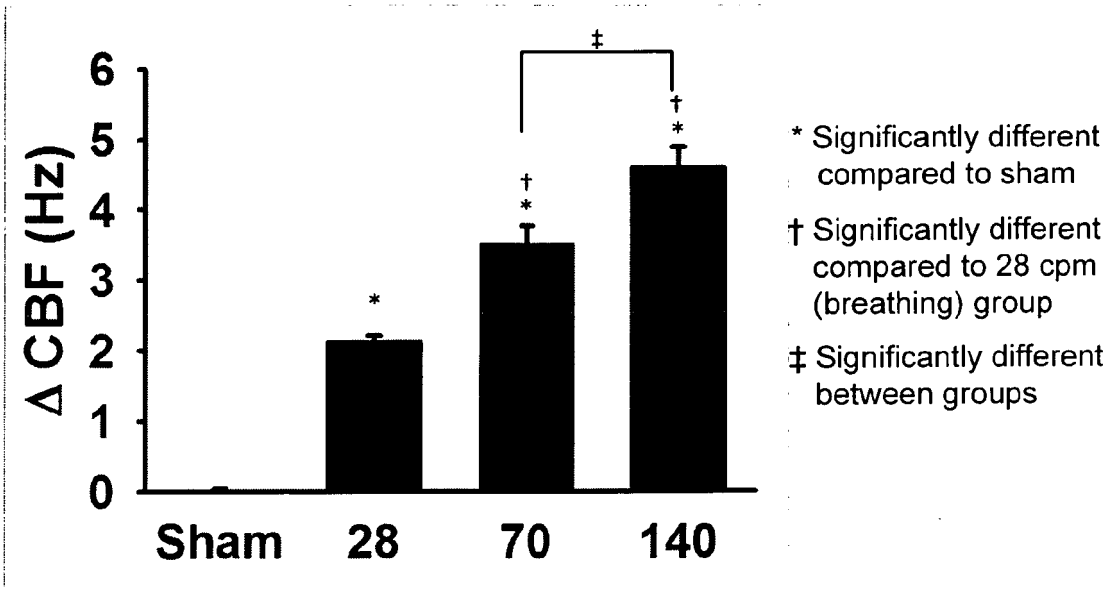
Height of ASL in cultures over time after cultures were removed from oscillating shear stress at 28, 70 and 140 CPM compared to sham (no stress).

FIG. 6B



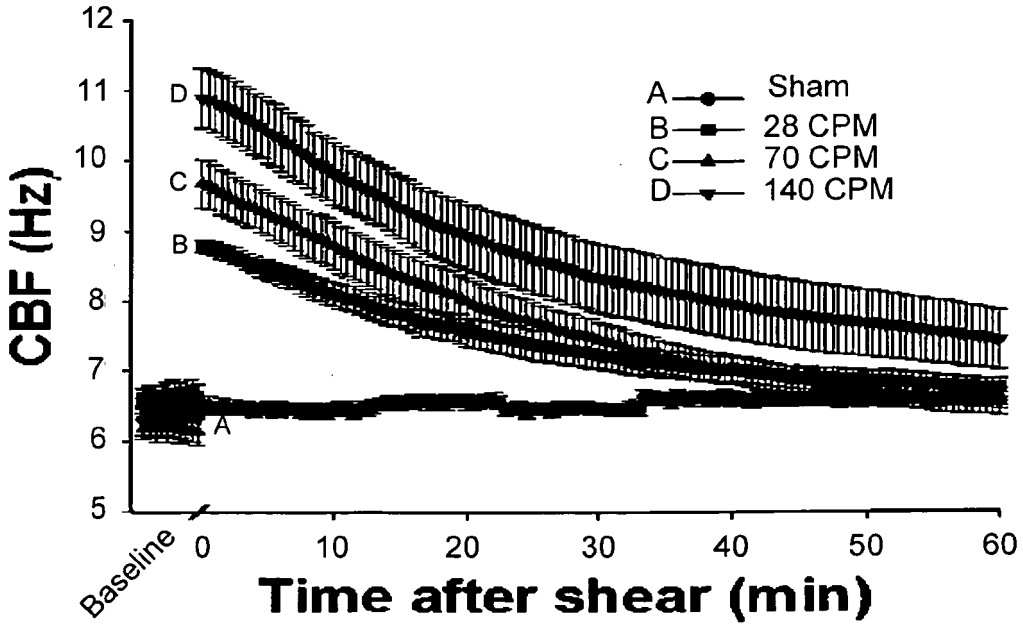
Comparison of steady state ATP concentrations in ASL of cultures subjected to shear shear stress at frequencies of 28, 70 and 140 CPM compared to sham (no stress).

FIG. 7



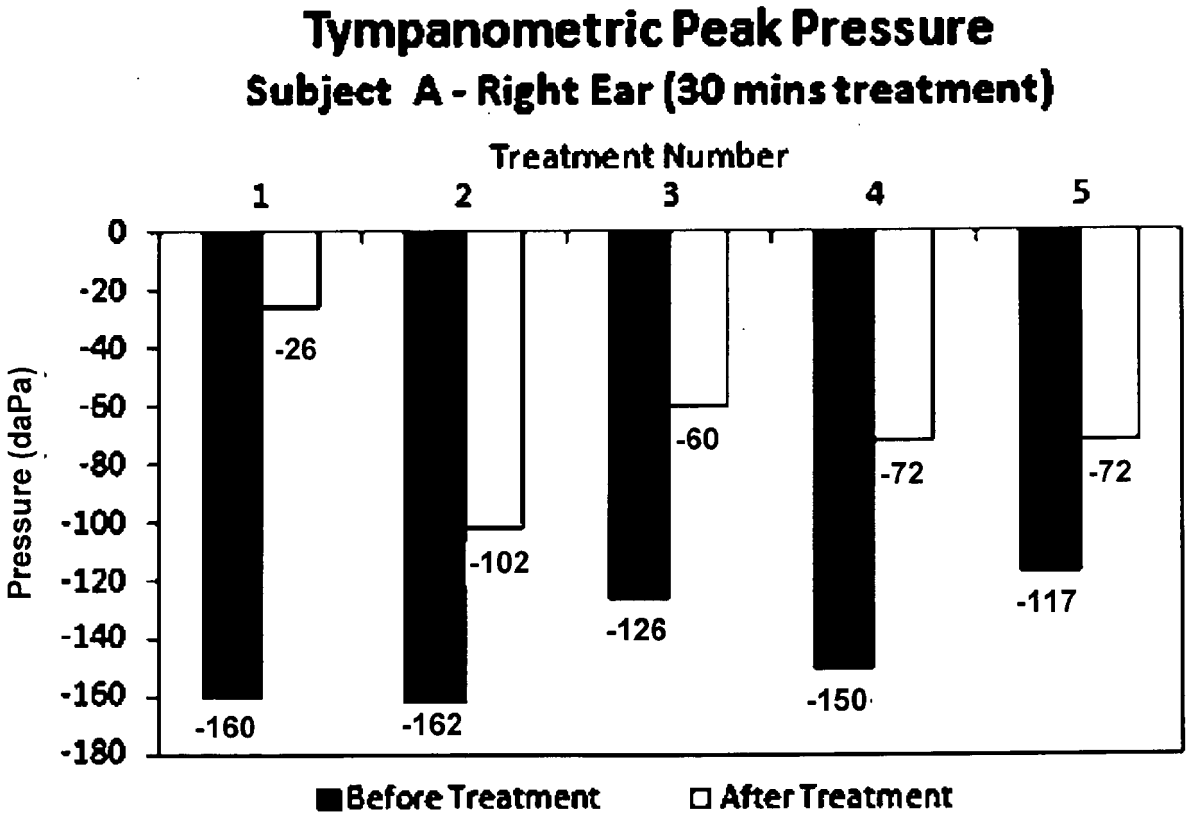
Change in CBF between pre-shear and immediately after cultures were removed from shear stress at frequencies of 28, 70 and 140 CPM compared to sham (no shear).

FIG. 8A



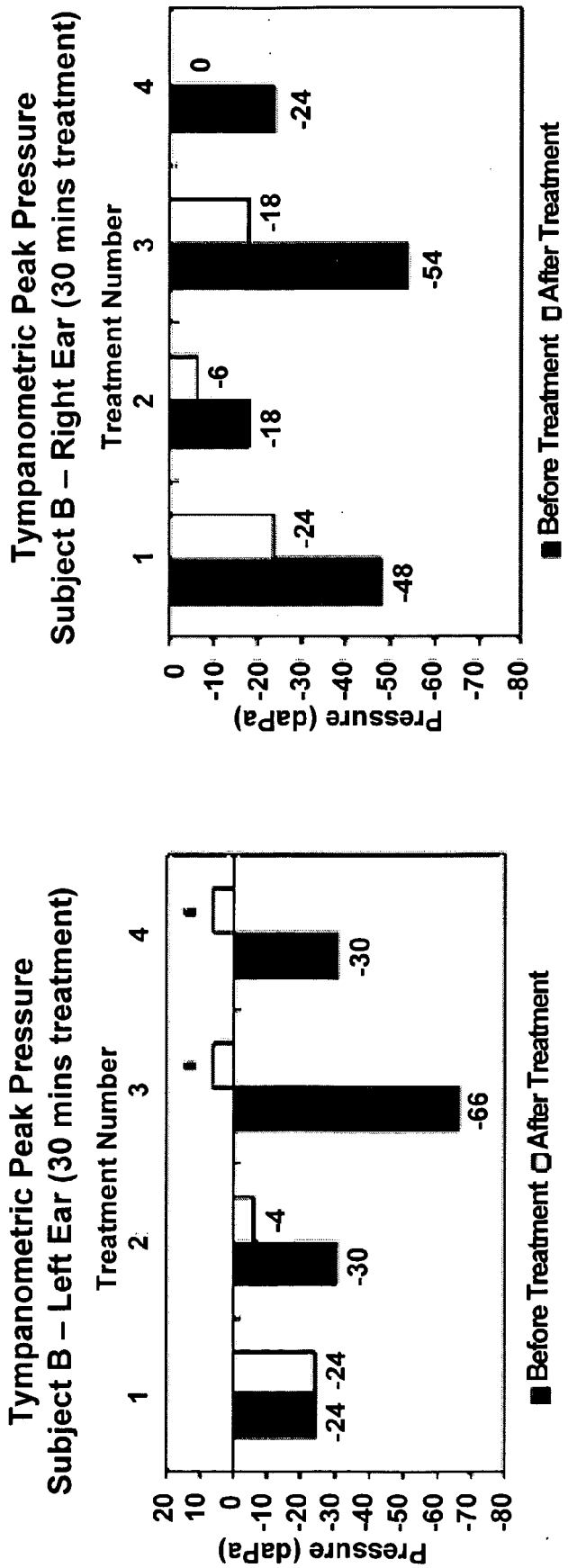
CBF over time after cultures were removed from oscillating shear stress at 28, 70 and 140 CPM compared to sham (no stress) cultures. Baseline is pre-shear CBF.

FIG. 8B



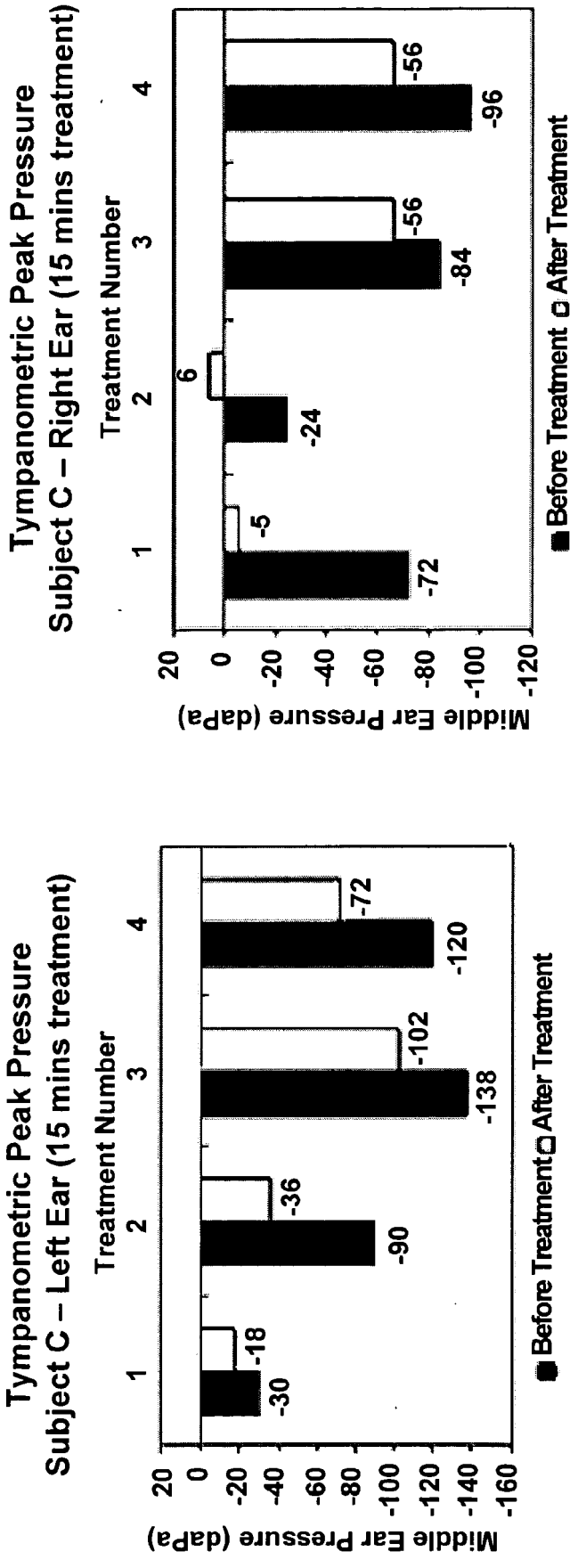
Middle ear pressure of right ear before and after treatment at 140CPM for 30 minutes for Subject A.

FIG. 9



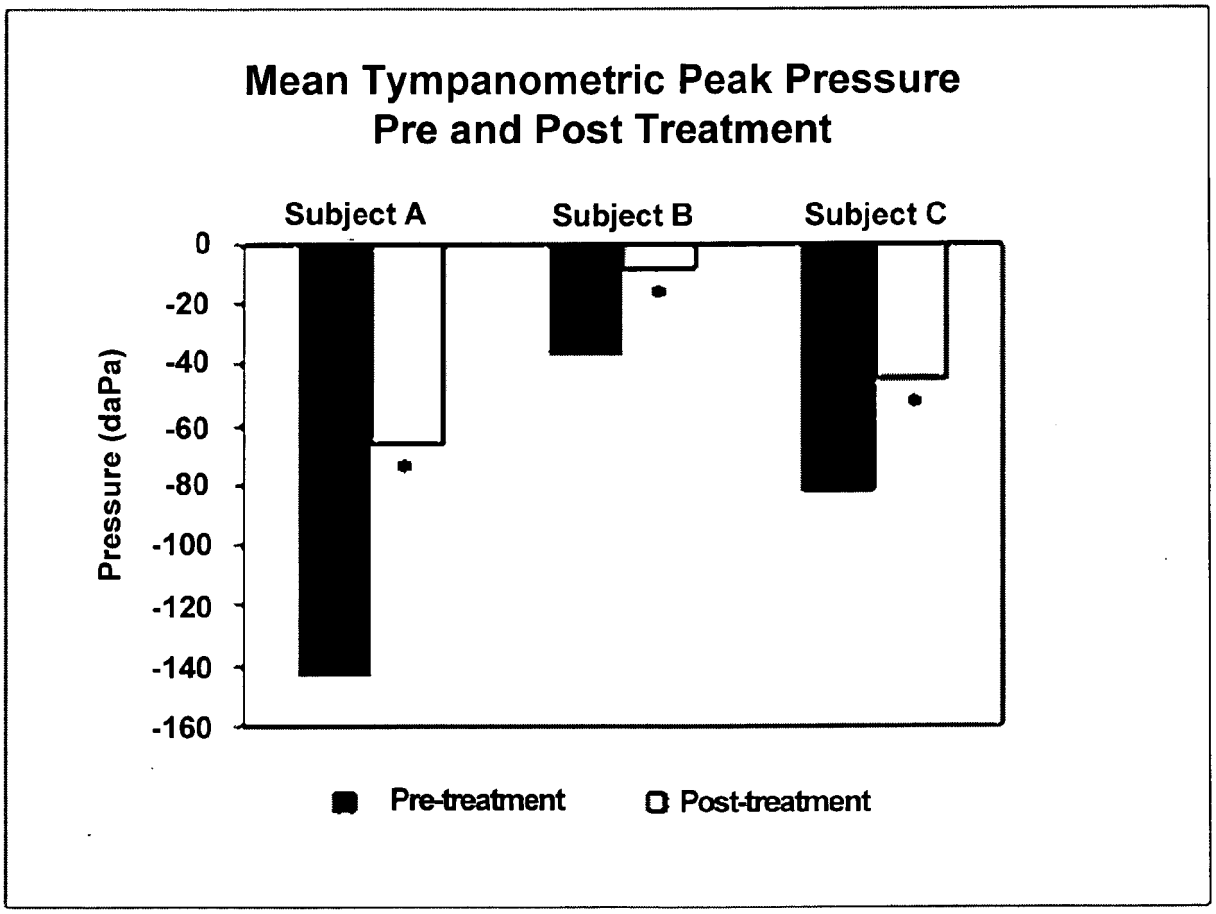
Middle ear pressure for Subject B before and after treatment at 140CPM for 30 minutes for (A) left ear and (B) right ear.

FIG. 10



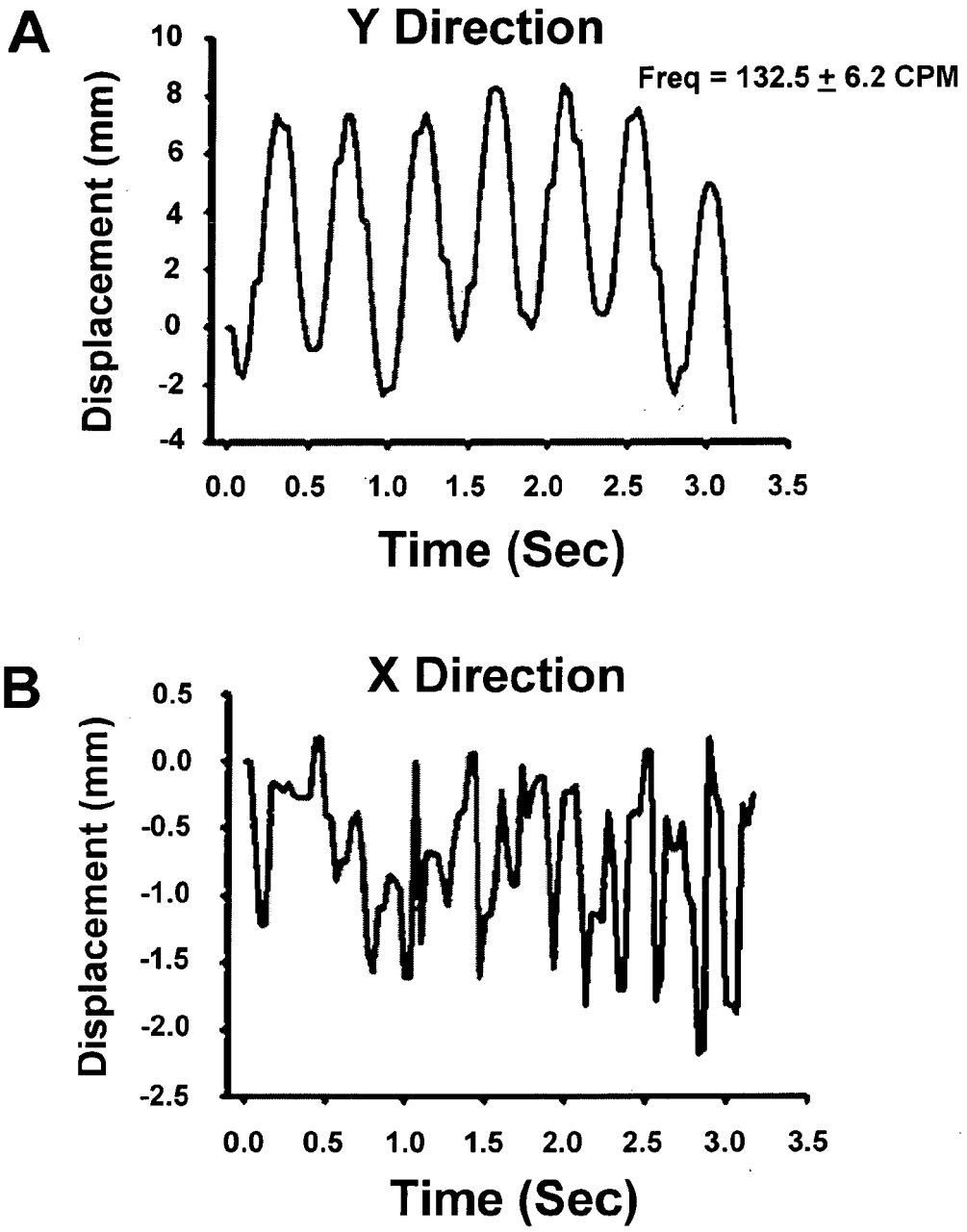
Middle ear pressure for Subject C before and after treatment at 140CPM for 15 minutes for (A) left ear and (B) right ear.

FIG. 11



Mean middle ear pressure before and after treatment.
* Significantly different compared to respective mean pre-treatment pressure

FIG. 12



Displacement over time in the forehead of individual using a therapeutic massage to generate oscillating motion along the respiratory tract. (A) Forehead displacement in the side-to-side direction. (B) Forehead displacement in the head-to-toe direction.

FIG. 13