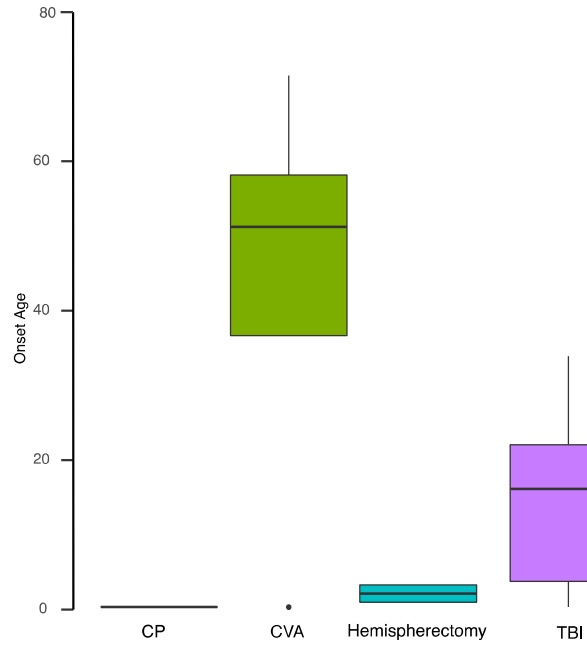
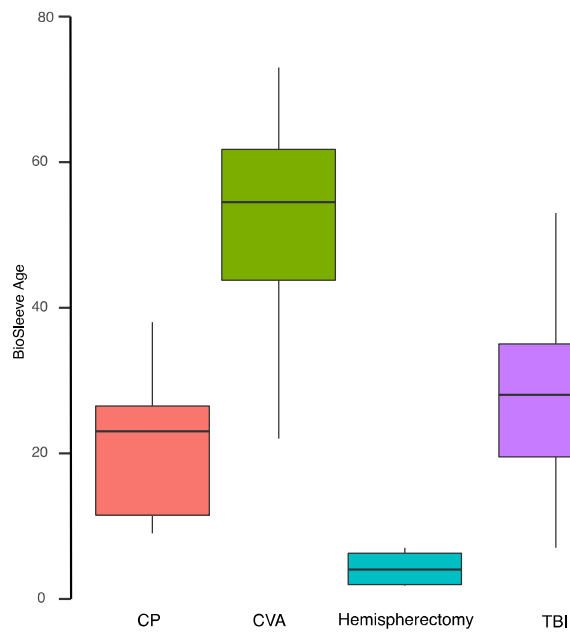


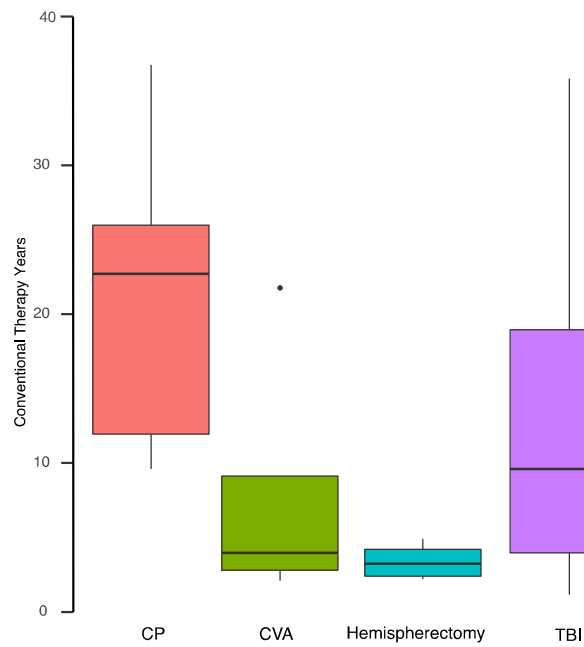
**Supplementary Document**



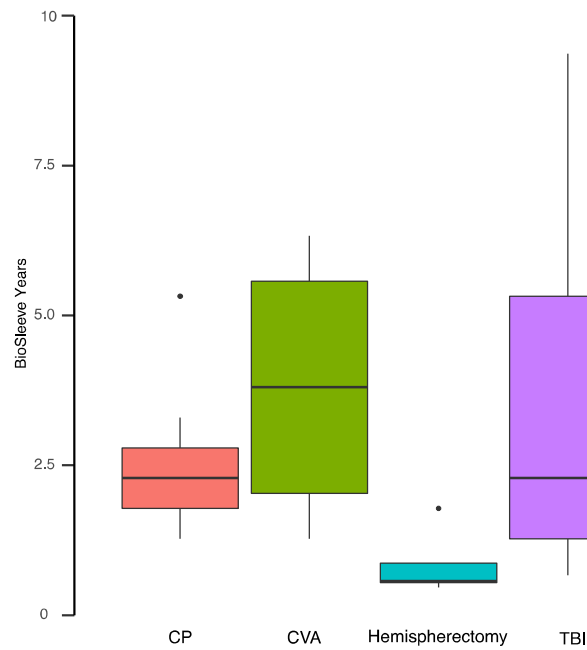
*Supplementary Figure 1: Onset Age of disease by diagnosis, showing CP and Hemispherectomy, as the youngest patients, followed by TBI and CVA as the oldest patients.*



*Supplementary Figure 2: Age of Installing BioSleeve by diagnosis, showing Hemispherectomy as the earliest installation, followed by CP, TBI, then CVA as the oldest patients.*

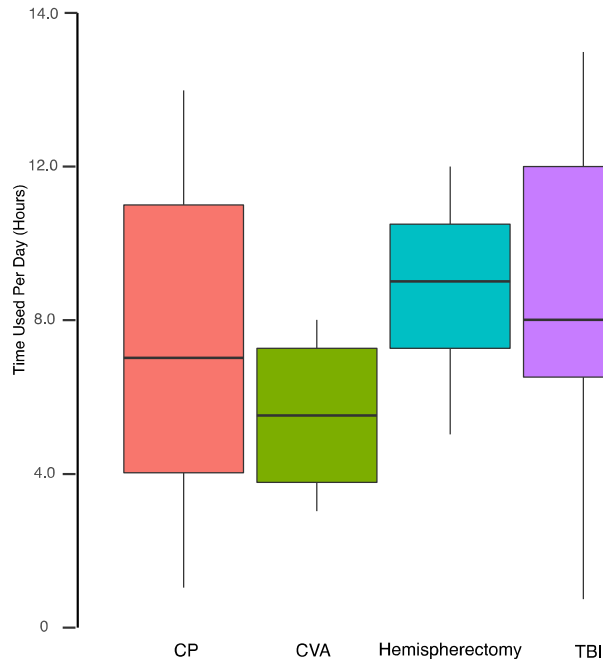


*Supplementary Figure 3: Conventional therapy years by Diagnosis, showing hemispherectomy as the least diagnosis with conventional therapy years, followed by CVA, TBI and CP as the most patients that undergoes longest conventional therapy. This is because CP starts at a very young age, and conventional therapy is the only approved therapy.*

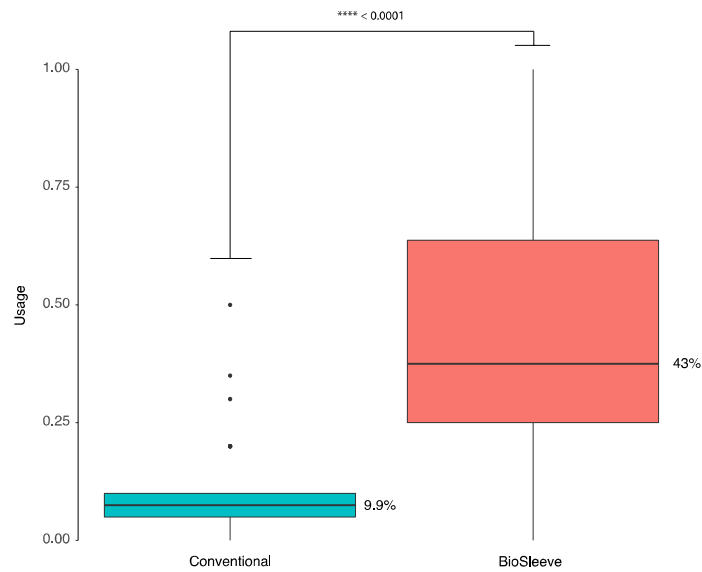


*Supplementary Figure 4: BioSleeve therapy years by Diagnosis, showing hemispherectomy as the least diagnosis with BioSleeve therapy years, followed by CP, TBI and CVA as the most patients that undergoes longest BioSleeve*

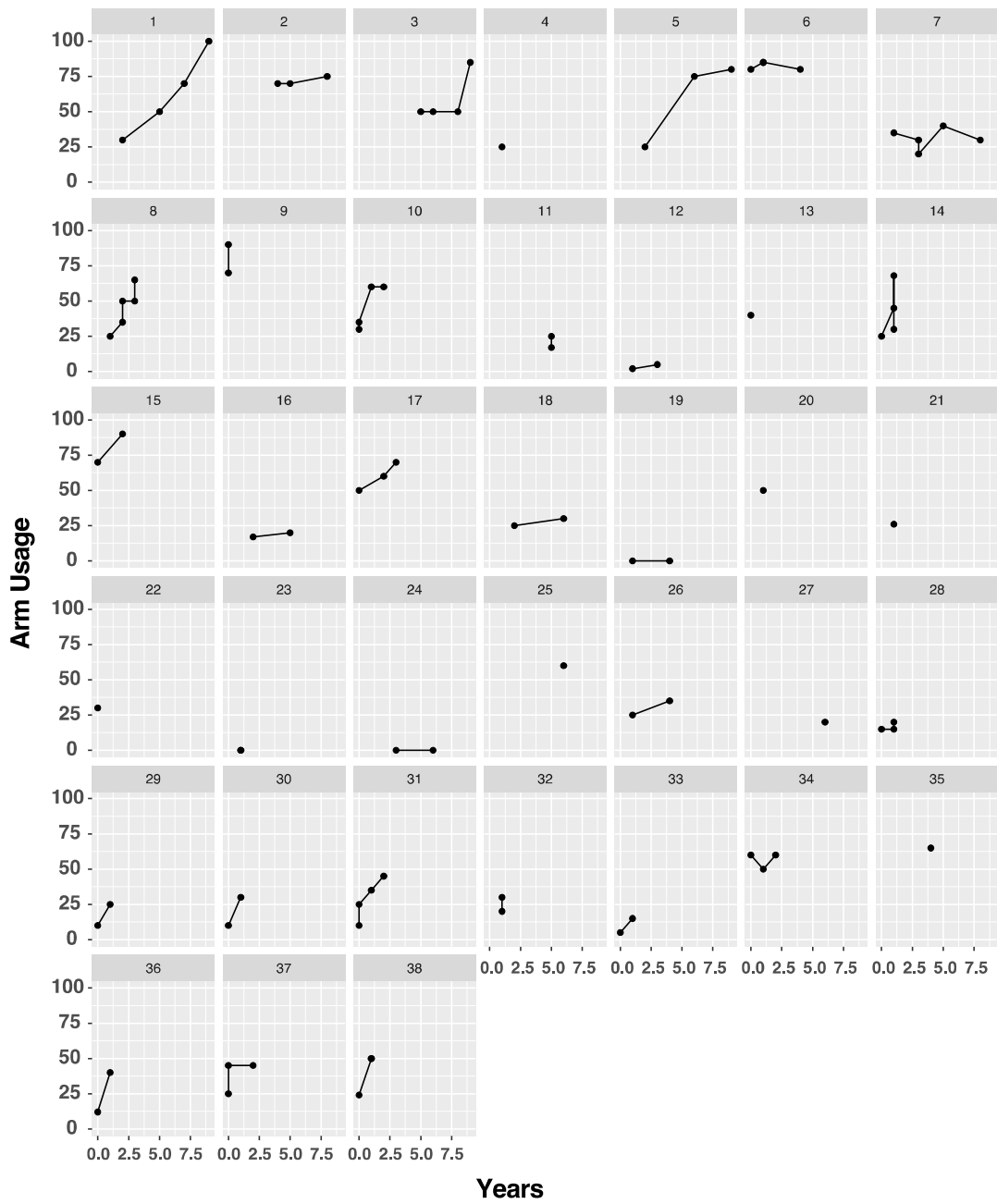
therapy years. This is because CP starts at a very young age, and conventional therapy is the only approved therapy.



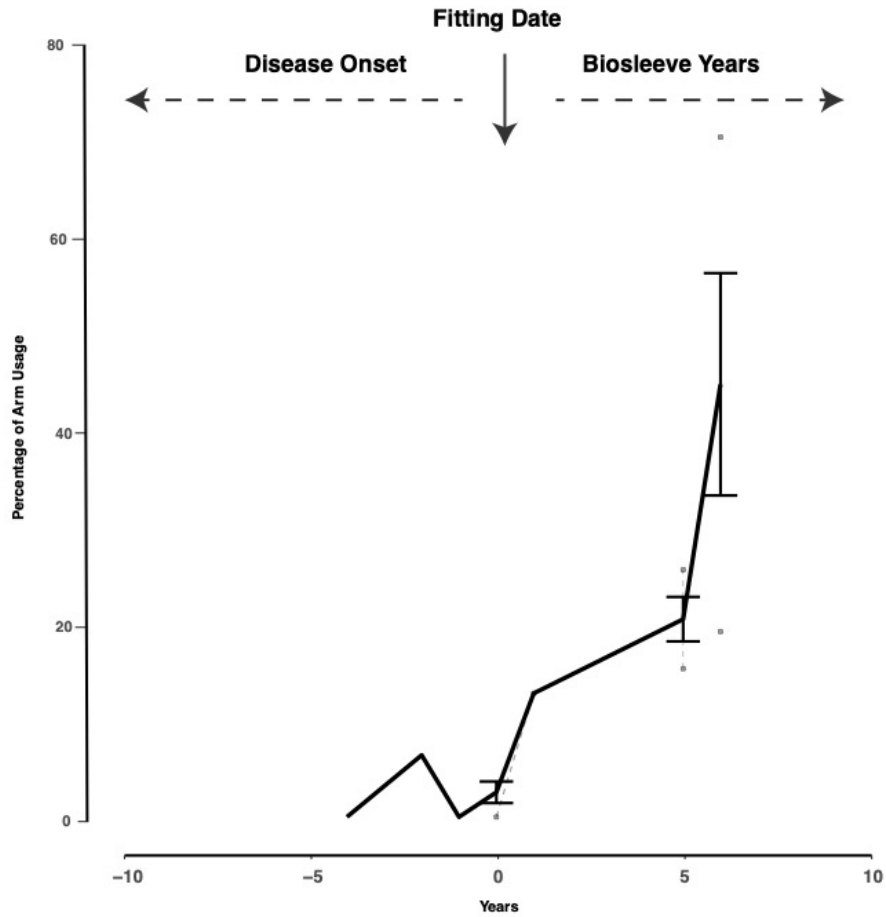
Supplementary Figure 5: Time the BioSleeve device used by Diagnosis, showing almost all diagnosis used an average of 8 hours per day.



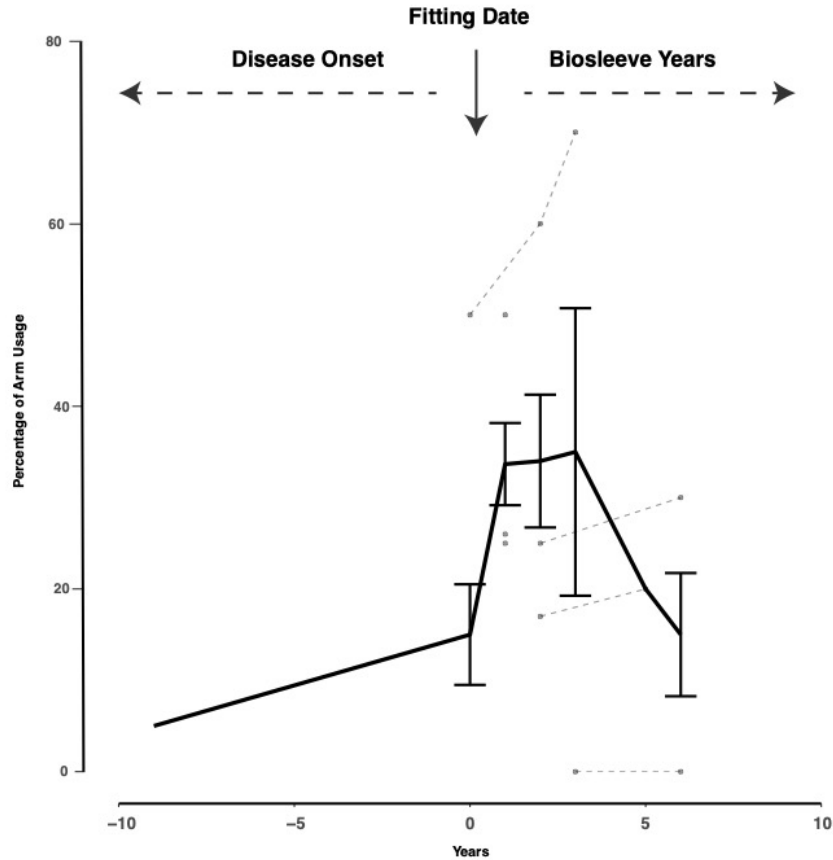
Supplementary Figure 6: BioSleeve intervention significantly ( $p < 0.0001$ ) increased arm usage in our cohort of disease compared to previously administered conventional therapy.



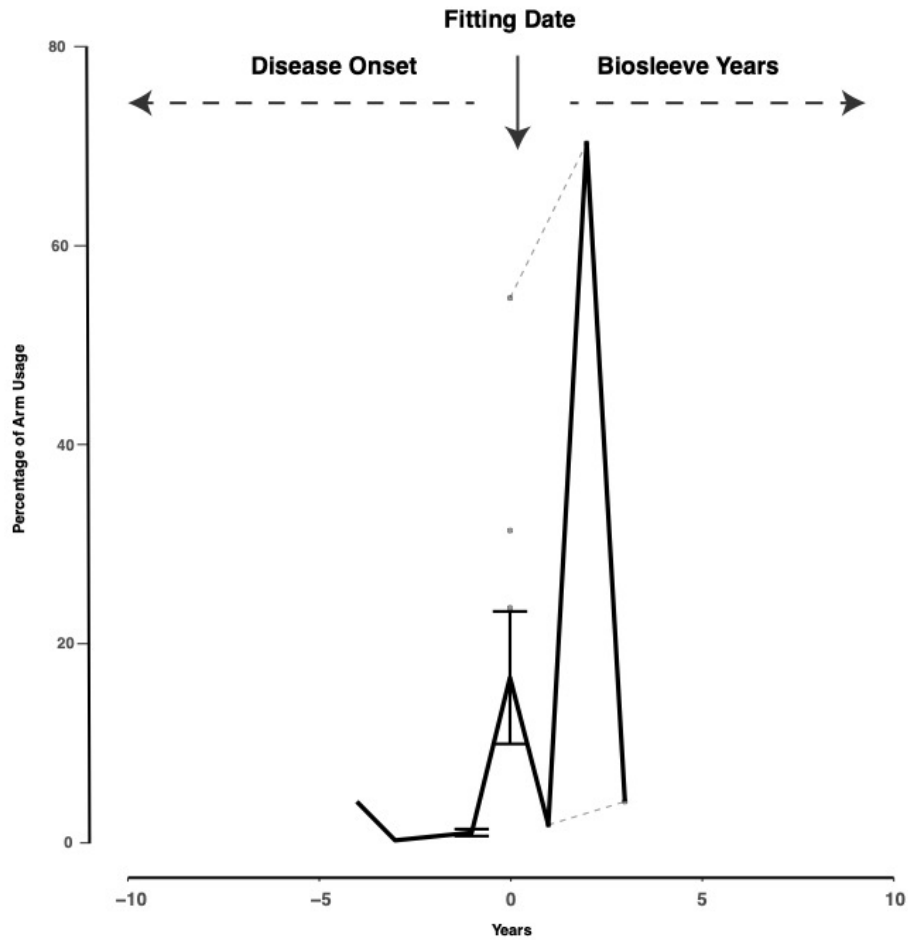
Supplementary Figure 7: Arm usage per patient across the follow up years, by patient ID, followed up to 10 years. The plot shows all patients follow up, showing heterogeneity in the patient response.



Supplementary Figure 8: Longitudinal arm usage for all CVA patients, restricting arm usage to 10 years prior to the fitting of the BioSleeve. All patients baselined to the fitting date at 0 years, then follow up of the patients continued for 10 years. Data assumes that there was little to no change in arm usage since disease onset. The solid line plot shows the average per year across all patients continuing in the follow up. The hatched lines shows data for individual patients. The percentage of arm usage at every year is represented in average  $\pm 1.96$  \* standard error.



Supplementary Figure 9: Longitudinal arm usage for all CP patients, restricting arm usage to 10 years prior to the fitting of the BioSleeve. All patients baselined to the fitting date at 0 years, then follow up of the patients continued for 10 years. Data assumes that there was little to no change in arm usage since disease onset. The plot shows the average per year across all patients continuing in the follow up. The solid line plot shows the average per year across all patients continuing in the follow up. The hatched lines shows data for individual patients. The percentage of arm usage at every year is represented in average  $\pm 1.96$  \* standard error.



Supplementary Figure 10: Longitudinal arm usage for all Hemispherectomy patients, restricting arm usage to 10 years prior to the fitting of the BioSleeve. All patients baselined to the fitting date at 0 years, then follow up of the patients continued for 10 years. Data assumes that there was little to no change in arm usage since disease onset. The plot shows the average per year across all patients continuing in the follow up. The solid line plot shows the average per year across all patients continuing in the follow up. The hatched lines shows data for individual patients. The percentage of arm usage at every year is represented in average  $\pm 1.96$  \* standard error.