## Orientation

The model containing interaction terms was similar to the model that only included the main effects of the covariates (*X*2(4) = 0.412, p = 0.981). The model with the main effects was significantly better than the model containing only age (*X*2(4) = 24.0, p < 0.001) and was significant using the overall model test (*X*2(5) = 41.4, p < 0.001). This model also had the lowest AIC of the three models.

The omnibus likelihood ratio tests showed that age (*X*2(1) = 12.6, p < 0.001) and education (*X*2(1) = 16.8, p < 0.001) were significant; however, sex (*X*2(1) = 0.167, p = 0.682) and job type (*X*2(2) = 0.610, p = 0.737) were not. The unstandardized estimates for the intercept (B = -2.33, SE = 0.173, Wald = 182, p < 0.001), age (B = 0.0410, SE = 0.0115, Wald = 12.7, p < 0.001) and education (B = -0.151, SE = 0.0393, Wald = 14.9, p < 0.001) were significant. The unstandardized estimates for sex (B = 0.0782, SE = 0.192, Wald = 0.167, p =0.683), and both job type variables mental - physical (B = -0.266, SE = 0.350, Wald = 0.581, p = 0.446) and mixed - physical (B = -0.0274, SE = 0.259, Wald = 0.0111, p = 0.916) were non-significant. Figure 2 plots these results.

For age, the estimated odds ratio showed a favored an increase of 4.2% (95% CI: 1.02, 1.06) probability of losing one point on the orientation questions for every one-year age increase year older someone was. For education, the estimated odds ratio favored a decrease of 14.1% (95% CI: 0.763, 0.928) probability of losing one point on the orientation questions for every additional year of education someone had.

## Immediate Memory Recall

None of the models predicting immediate recall were significant, likely due to less than one percent of the sample losing one point.

## Working Memory

The model containing interaction terms was similar to the model that only included the main effects of the covariates(*X*2(4) = 0.492, p = 0.974). The model with the main effects was significantly better than the model containing only age (*X*2(4) = 36.5, p < 0.001) and was significant using the overall model test (*X*2(5) = 46.2, p < 0.001). This model also had the lowest AIC of the three models.

The omnibus likelihood ratio tests showed that age (*X*2(1) = 6.74, p = 0.009), education (*X*2(1) = 8.60, p = 0.003), job type (*X*2(2) = 11.74, p = 0.003), and sex (*X*2(1) = 4.29, p = 0.038) were significant. The unstandardized estimates for the intercept (B = -1.95, SE = 0.164, Wald = 141, p < 0.001), age (B = 0.0293, SE = 0.0112, Wald = 6.82, p = 0.009), education (B = -0.0994, SE = 0.0352, Wald = 7.96, p = 0.005), both job type variables mental - physical (B = -0.726, SE = 0.336, Wald = 4.66, p = 0.031) and mixed - physical (B = -0.782, SE = 0.291, Wald = 7.21, p = 0.007), and sex (B = 0.380, SE = 0.186, Wald = 4.18, p = 0.041) were all significantly large. Figure 3 plots these results.

For age, the estimated odds ratio favored an increase of 3.0% (95% CI: 1.01, 1.05) probability of losing one point on the digit span questions for every year older someone was. For education, the estimated odds ratio favored a decrease of 9.5% (95% CI: 0.845, 0.970) probability of losing one point on the digit span questions for every year of education someone had. For job type, the estimated odds ratio favored a decrease of 52.7% (95% CI: 0.250, 0.935) probability of losing one point on the digit span questions when having a mental effort-based job compared to a physical effort type job. For a mixed-type job, the estimated odds ratio favored a decrease of 56.3% (95% CI: 0.258, 0.809). For sex, the estimated odds ratio favored an increase of 46.2% (95% CI: 1.02, 2.10) probability of losing one point on the digit span questions for females compared to males.

## Executive Function

The model containing interaction terms was significantly better than the model containing the main effects of the covariates (*X*2(4) = 10.70, p = 0.030) and was significant using the overall model test (*X*2(9) = 24.5, p = 0.004). This model also had the lowest AIC of the three models. The omnibus likelihood ratio tests showed that the age-by-sex interaction (*X*2(2) = 7.96, p = 0.005, age (*X*2(1) = 5.13, p = 0.024), education (*X*2(1) = 10.99, p < 0.001), and job type (*X*2(2) = 8.33, p = 0.016) were significant.

The unstandardized estimates for the intercept (B = -1.95, SE = 0.164, Wald = 141, p < 0.001), age (B = 0.0293, SE = 0.0112, Wald = 6.82, p = 0.009), education (B = -0.0994, SE = 0.0352, Wald = 7.96, p = 0.005), both job type variables mental - physical (B = -0.726, SE = 0.336, Wald = 4.66, p = 0.031) and mixed - physical (B = -0.782, SE = 0.291, Wald = 7.21, p = 0.007), and sex (B = 0.380, SE = 0.186, Wald = 4.18, p = 0.041) were all significantly large. For age, the estimated odds ratio favored an increase of 3.0% (95% CI: 1.01, 1.05) probability of losing one point on the digit span questions for every year older someone was.

For education, the estimated odds ratio favored a decrease of 9.5% (95% CI: 0.845, 0.970) probability of losing one point on the digit span questions for every year of education someone had. For job type, the estimated odds ratio favored a decrease of 52.7% (95% CI: 0.250, 0.935) probability of losing one point on the digit span questions when having a job requiring mental effort as compared to physical effort. For a mixed-effort job, the estimated odds ratio favored a decrease of 56.3% (95% CI: 0.258, 0.809). For sex, the estimated odds ratio favored an increase of 46.2% (95% CI: 1.02, 2.10) probability of losing one point on the digit span questions for females compared to males.

The results from this task, as shown in Figure 4, demonstrate age effects in opposite directions for sex. It must be stressed that this plot is of marginal means for only part of the model, where other effects are also significant. The final panel of the figure demonstrates that the overall effects between the sexes are similar and differ only in magnitude.

## Delayed Memory Recall

The model containing interaction terms was similar to the model that only included the main effects of the covariates (*X*2(4) = 3.64, p = 0.458). The model with the main effects was significantly better than the model containing only age (*X*2(4) = 21.8, p < 0.001) and was significant using the overall model test (*X*2(5) = 21.8, p < 0.001). This model also had the lowest AIC of the three models.

The omnibus likelihood ratio tests showed that education (*X*2(1) = 7.67, p = 0.0056) was significant; however, age (*X*2(1) = 0.641, p = 0.423), sex (*X*2(1) = 0.364, p = 0.546) and job type (*X*2(2) = 4.49, p = 0.106) were not. The unstandardized estimates for the intercept (B = -0.848, SE = 0.116, Wald =53.8, p < 0.001), education (B = -0.0636, SE = 0.0234, Wald = 7.39, p = 0.0066), and job type of mental - physical effort (B = -0.431, SE = 0.218, Wald = 3.90, p = 0.0482) were significant. The unstandardized estimates for age (B = -0.0069, SE = 0.0087, Wald = 0.638, p = 0.424), sex (B = -0.0821, SE = 0.136, Wald = 0.364, p = 0.546), and the job type of mixed - physical (B = -0.205, SE = 0.192, Wald = 1.14, p = 0.285) were non-significant. Figure 5 plots these results.

For education, the estimated odds ratio favored a decrease of 6.2% (95% CI: 0.896, 0.982) probability of losing one point on the delayed recall questions for every year of education someone had. For job type, the estimated odds ratio favored a decrease of 35.0% (95% CI: 0.424, 0.997) probability of losing one point on the delayed recall questions when having an intellectual job compared to a physical effort type job.

## Visuospatial

The model containing interaction terms was similar to the model that only included the main effects of the covariates (*X*2(4) = 4.18, p = 0.382). The model with the main effects was significantly better than the model containing only age (*X*2(4) = 40.7, p < 0.001) and was significant using the overall model test (*X*2(5) = 160, p < 0.001). This model also had the lowest AIC of the three models.

The omnibus likelihood ratio tests showed that age (*X*2(1) = 102, p < 0.001), education (*X*2(1) = 14.2, p < 0.001), and job type (*X*2(2) = 10.6, p = 0.0051) were significant; however, sex (*X*2(1) = 2.57, p = 0.109) was not. The unstandardized estimates for the intercept (B = -2.21, SE = 0.164, Wald = 183, p < 0.001), age (B = 0.100, SE = 0.0104, Wald = 92.2, p < 0.001), education (B = -0.134, SE = 0.0375, Wald = 12.9, p < 0.001), both job types of mental - physical effort (B = -0.848, SE = 0.379, Wald = 5.01, p = 0.0252), and mixed - physical effort (B = -0.615, SE = 0.260, Wald = 5.59, p = 0.0180) were significant. The unstandardized estimates for sex (B = 0.282, SE = 0.177, Wald = 2.53, p = 0.112) was non-significant. Figure 6 plots these results.

For age, the estimated odds ratio favored an increase of 10.5% (95% CI: 1.08, 1.13) probability of losing one point on the visuospatial task for every year older someone was. For education, the estimated odds ratio favored a decrease of 13.6% (95% CI: 0.812, 0.941) probability of losing one point on the visuospatial task for every year of education someone had. For job type, the estimated odds ratio favored a decrease of 57.2% (95% CI: 0.204, 0.900) probability of losing one point on the visuospatial task when having a mental effort job compared to a physical effort type job. For job type, the estimated odds ratio favored a decrease of 46.0% (95% CI: 0.324, 0.900) probability of losing one point on the visuospatial task when having a mixed effort job compared to a physical effort type job.