**RESULTS**: The model for detecting PIA ( $\chi^2 = 2,023$ ; p < 0.001; R<sup>2</sup> of Nagelkerke= 0.153) was able to identify 10.7% of the inactive and 96.9% of the active people (74.5% of the total sample). The variables contributing to the detection of PIA were (p ≤ 0.01): having a disability or an illness ( $\beta = 0.521$ , SE = 0.052), not having friends to do sport with ( $\beta = 0.314$ , SE = 0.089), lacking motivation or interest ( $\beta = 0.407$ , SE = 0.04), and being afraid of the risk of an injury ( $\beta = 0.190$ , SE = 0.073). Additionally, totally agreeing, tend to agree, and tend to disagree regarding the extent of local providers offering enough opportunities to be more active also contributed to the model ( $\beta = 0.302.433$ , SE = 1.353-1.542). **CONCLUSIONS**: Overall, the model was effective for detecting PA but not PIA. However, in the proportion where PIA was detected, key subjective factors influencing PIA began to emerge. Greater insight into these subjective mediators will be helpful in drafting effective policy around active living, and therefore better correlates should be included in future public health surveillance efforts.

# 911 Board #145 May 29 2:00 PM - 3:30 PM

#### Examining the Influence of Waist Circumference in Cardiovascular Disease Mortality Risk Prediction Modeling

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(No relationships reported)

Despite the robust statistical association between waist circumference (WC) and cardiometabolic risk factors (hypertension, dyslipidemia), and outcomes (type 2 diabetes, cardiovascular disease (CVD)) there is little evidence exploring the addition of WC to risk factors commonly employed in CVD risk prediction models.

PURPOSE: To assess the influence of adding WC to a CVD mortality risk model.

**METHODS**: Data were obtained from the Aerobics Center Longitudinal Study. A total of 34,377 males (mean age 44.9 years; standard deviation (SD), 9.9 years) who completed a baseline medical examination between 1978 and 2002 were included. WC was measured at the level of the umbilicus and expressed as a continuous variable. CVD mortality was the main outcome. Deaths among participants were identified from the National Center for Health Statistic's National Death Index. Follow-up time of less than 1 year (baseline to December 31, 2003 or CVD mortality) were excluded.

**RESULTS**: A total of 645 CVD deaths occurred over a mean follow-up period of 13.6 years (SD 7.4 years), for a total of 467,213 person-years of follow-up. Mean WC of the cohort was 94 cm (SD 11 cm). In a Cox proportional hazards model, including age, total cholesterol, HDL cholesterol, systolic blood pressure, current smoking status, and diabetes, WC was independently associated with CVD mortality (p < 0.0001). The Harrell's C-index without WC in the model was 0.834, and 0.837 upon addition of WC to the model.

**CONCLUSION**: In this large population sample of men, WC was significantly associated with cardiovascular disease mortality independent of cardiometabolic risk factors. However, the addition of WC to these variables did not meaningfully improve our cardiovascular disease morality risk prediction model.

#### 912 Board #146

## May 29 2:00 PM - 3:30 PM

### The Prevalence of Depression Among Diabetic Patients is Associated with Hemoglobin

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(No relationships reported)

More than 400 million adults have diabetes. Complications associated with diabetes poorly impact quality of life, including interactions between cardiovascular risk and depression. A diagnosis of diabetes associates with a three-fold increase in depression. The consequences of low Hb values on increased depression among healthy populations are well defined; however, isolating the relationship within a diabetic population requires further investigation.

PURPOSE: To explore the effect of diabetes on hemoglobin levels (Hb) and depression in a diabetic population.

**METHODS:** 2,206 hospital patients, age 15-98 years old were sampled; 14.6% had a diagnosis of diabetes. Independent-samples t-tests characterized the differences between diabetics (n=1,884) and non-diabetics (n=322). One-way ANOVA examined group differences between categorical Hb values, Chi-Square determined the relationship between diabetes and hemoglobin category, linear regression determined Hb levels among diabetics, and logistic regression analyses predicted depression outcomes based on Hb levels.

**RESULTS:** Patients with diabetes were older (p<0.001) and had lower hemoglobin (p<0.001) and oximetry levels (p<0.001). Non-diabetic patients had lower international normalized ratio (p<0.001), systolic blood pressure (p<0.001), mean arterial pressure (p=0.015), and pulse pressure (p<0.001). Hb categories differed in age, oximetry, international normalized ratio, pulse, diastolic blood pressure, mean arterial pressure, and pulse pressure (p=0.015); groups differed for systolic blood pressure (p=0.013). Additionally, chi-squared analysis demonstrated lower hemoglobin levels associated with increased diagnosis of diabetes (p<0.001). Linear regression, controlling for age, predicted a decrease in Hb among diabetic patients ( $\beta=0.460$ ; p<0.001). Lastly, logistic regression determined with each additional g/dL of Hb, the odds of experiencing depression decreased by 31% (p<0.001).

CONCLUSIONS: Diabetes diminishes cardiovascular health, particularly Hb levels, and this predicts depression within this population. Physical activity should be a first-line intervention to improve quality of life in patients suffering from diabetes.

#### 913 Board #147 May 29 2:00 PM - 3:30 PM

# Changes In Physiological Factors And Performances In Female Track-and-field Athletes Transitioning To Senior

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(No relationships reported)

Performance decline in female track-and-field (T&F) athletes transitioning to senior has been indicated but there has not been any solutions of that yet.

PURPOSE: To examine changes of physiological factors in female T&F athletes transitioning to senior and analyze their relationship to performances.

**METHOD**: Of 142 top-level female T&F athletes recruited, we analyzed the data of 38 subjects who were sprinters and jumpers aged 17-18 in the season of 2016. We measured body composition with whole body mode dual-energy X-ray absorptiometry device in post-season of 2016 (Po-16) and 2017 (Po-17). Athletes' performances were assessed by International Amateur Athletics Federation scoring system. Comparisons were made by a one-way analysis of covariance.

**RESULTS**: Compared to performances in Po-16, 14 athletes (Group A) were able to maintain or improve in Po-17, while the other 24 (Group B) were not able to and the scores were significantly different between the two groups (991.36±46.50 vs 947.46±64.24score, p<0.05). In Po-16, there were no significant differences in their body composition between the two groups. In Po-17, however, fat mass (FM) and FM% increased in Group B in all body parts, while they did not in Group A in any, and were significantly different between the two groups (Upper extremities (UE): FM 833.07±182.34 vs 1030.93±260.77g, p<0.05, FM% 15.90±3.28 vs 18.44±3.55%, p<0.05; Trunk: FM 2587.11±699.19 vs 3493.36±856.99g, p<0.01, FM%11.18±2.60 vs 13.99±2.46%, p<0.01; Lower Extremities (LE): FM 3175.16±649.74 vs 4228.59±830.73g, p<0.01, FM% 16.84±3.02 vs 20.54±2.67%, p<0.01; Total: FM 7467.39±1440.28 vs 9638.89±1821.62g, p<0.01, FM% 14.44±2.36 vs 17.29±2.22%, p<0.01, in Po-17, Group A vs Group B). In addition, lean mass (LM)% was significantly higher in Group A compared to Group B in Po-17 (UE: 79.22±3.12 vs 76.65±3.43%, p<0.01; Trunk: 86.20±2.59 vs 83.42±2.36%, p<0.01; LE: 78.68±3.09 vs 75.17±2.54%, p<0.01; Total: 81.25±2.30 vs 78.51±2.08 p<0.01) in all body parts although there had been no significant difference in Po-16.

**CONCLUSION:** While majority of female T&F athletes face performance decline when transitioning to senior, those who maintain or improve high performance levels were shown to have kept their FM and FM% low and LM% high. Supported by Japan Sports Agency, Support for female athletes.

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