When adding body mass index and leisure time physical activity to the models, capillary density was no longer associated with adiponectin (P=0.29), whereas major fiber type still was a strong determinant of adiponectin concentrations (P=0.004). Additional adjustment for glucose disposal rate (insulin sensitivity) weakened the association of major fiber type with serum adiponectin (mean adiponectin concentration, 10.6, 9.9, and 9.3 mg/L; P for trend=0.027). **Conclusions:** In our large community-based sample, examined with muscle biopsies and a gold standard insulin sensitivity technique, circulating adiponectin concentrations were higher with increasing skeletal muscle capillary density and in individuals with higher proportion of muscle fibers of slower type. These associations were partly accounted for by insulin sensitivity, indicating a common pathophysiological pathway.

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RANTES/CCL5 Gene Polymorphisms, Serum Concentrations, and Incident Type 2 Diabetes: Results from the MONICA/KORA Augsburg Case-Cohort Study, 1984–2002

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Background: RANTES (regulated on activation, normal T-cell expressed and secreted)/CCL5, a chemokine which is expressed by adipocytes, has been hypothesized to be involved in leukocyte infiltration of adipose tissue in obesity. The aim of this study was to analyze whether RANTES may be involved in the pathogenesis of type 2 diabetes by investigating the triangular relationship between CCL5 gene polymorphisms, RANTES serum levels and the risk for type 2 diabetes mellitus (T2DM) in the population-based MONICA/KORA case-cohort study. Methods: RANTES serum concentrations (ELISA, R&D Systems) were determined in 502 individuals with incident T2DM and 1,632 individuals without T2DM during follow-up (mean follow-up time 10.1±4.9 years). Six single nucleotide polymorphisms (SNPs) were genotyped within the CCL5 gene (promoter: rs2107538 [-403G>A], rs2280788 [-28C>G]; intronic: rs2280789, rs4796120, rs3817655; 3'-flanking region: rs1065341). Results: Minor alleles of rs2280788, rs2280789, rs4796120 and rs3817655were associated with lower serum levels (P additive between 1.2x10 -9 and 3.1x10 -8). When compared with the lowest RANTES quartile, higher RANTES concentrations were not associated with significantly increased risk to develop type 2 diabetes during follow-up. Finally, no association was found between six CCL5 SNPs or CCL5 haplotypes and incident T2DM neither in crude nor in the fully-adjusted models. Conclusion: Although several CCL5 minor alleles were strongly related to decreased RANTES levels, neither CCL5 genotypes nor RANTES concentrations were associated with the risk for T2DM.

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Non-High-Density-Lipoprotein Cholesterol and Cardiovascular Risk Factors Among Adolescents with and Without Impaired Fasting Glucose

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To evaluate the impact of IFG on the association of non-HDL cholesterol (equal to total cholesterol - HDL cholesterol) with CV risk factors among adolescents, we pooled 2,758 adolescents (1,424 males and 1,334 females) aged 12 - 19 years from three data sets of the National Health and Nutrition Examination Survey (NHANES 1999, 2001, and 2003), who had no self-reported history of physician diagnosed diabetes and fasted overnight (>8 hrs) and had no missing information of plasma glucose and lipids profile for this analysis. IFG was defined as fasting glucose level >100 mg/dL. Age-specific cut-off points were used for CV metabolic risk factors including higher levels of triglycerides (TG), waist circumference (WC), blood pressure (BP), and lower level of HDL cholesterol. The clustered metabolic CV risk was defined as any two of the four CV metabolic risk factors and obesity was defined as BMI-z score >0.85. In general, the level of non-HDL cholesterol was positively associated ($p<.05$) with BMI, girth measurements, systolic BP, and all lipids protein cholesterol except for HDL cholesterol, which had a negative association. Approximately 10.2% of adolescents had IFG, but their non-HDL cholesterol levels were much higher than those adolescents without IFG (121.4 vs. 110.1 mg/dL, $p<.05$). Using multiple regression model to adjusted for age, gender, race, family income, smoking status, physical activity, BMI, and LDL cholesterol, we observed that the level of fasting glucose was significantly associated with the level of non-HDL cholesterol (regression coefficient 0.12, $p<.01$). If high non-HDL cholesterol was defined as the gender-specific levels higher than the 3rd quartile of non-HDL cholesterol, then those with IFG and high non-HDL cholesterol had 7-fold higher odds of being with the clustered metabolic CV risk and approximately 4-fold higher odds of being obese compared to those without IFG and a low level of non-HDL cholesterol ($p<.001$). Those results suggest that the non-HDL cholesterol level is an important indictor in monitoring CV risk among adolescents with IFG.

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A National Survey of the Effectiveness of the KID-FIT Program in Altering Children's Fitness and Knowledge About Health-Related Behavior and Nutrition

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Purpose: The present study was conducted to examine the physical fitness and health knowledge benefits for Kindergarten age children participating in KID-FIT, a preschool physical education program. **Background/Significance:** Although children's fitness levels continue to decline and childhood obesity is on the rise, few programs have been identified as interventions that work to address the above concerns **Methods:** This pre-post study recruited 824 Kindergarten and Grade 1 public school children. Fitness level was determined by a 5-part P.E. assessment recording measures of strength, flexibility, endurance, balance and sports skills. Health knowledge was measured by a 28-item questionnaire using illustrations for identification and recall, and a series of 3 drawings done by each child of their internal organs, and healthy and harmful behavior that also allowed for an examination of their cognitive development. All of the children were given the pre-test at the beginning of the school year, but only the Kindergarten students were exposed to the KID-FIT program and tested again at the end of the school year. The data was analyzed first with ANOVA and then Tukey's tests as appropriate. **Results:** A significant improvement in physical fitness and in objective health related knowledge was found in Kindergarten children by the end of the study. These improvements placed them at a level significantly above the Grade 1 controls. The KID-FIT program did not affect the children's cognitive development which showed age appropriate progression during the study. **Conclusions:** The KID-FIT program appears to be an effective intervention for helping small children learn healthy lifestyle habits while increasing their physical fitness abilities. Whether these improvements persist, and any other health benefits occur in the children exposed to the KID-FIT program will require further study. For more details, contact Michele Silence: michele@kid-fit.com

PHYSICAL FITNESS LEVEL

	Kindergarten Pre	Kindergarten Post	Grade 1 Post
No. of Students	241	240	340
Mean	68.98	80.43	70.12
Standard Error	1.14	.954	1.042

Fitness significantly improved

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Determinants of Older, Urban African Americans' Neighborhood Walking

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Physical inactivity is a risk factor for cardiovascular disease, and is higher in ethnic and racial minorities, older adults, and lower SES groups. Walking is the most common type of physical activity (PA) chosen by older adults. It is unclear how characteristics of the neighborhood environment influence walking in older, African American urban adults. Purpose: To identify characteristics of the neighborhood environment which encourage or discourage walking in older, urban African American adults. Methods: A convenience sample of African Americans aged 60 years and older was recruited from a Midwestern urban senior center. Data were collected using focus groups and Photovoice to help identify neighborhood environmental walking determinants. For Photovoice, participants took pictures of the characteristics in their neighborhood that promoted or inhibited walking. The pictures were used to facilitate focus group discussions. Focus group data collection continued until saturation of responses was reached. Experts evaluated the responses and themes to assure content validity. Results: Twenty-one participants (2 male & 19 female; 9 walkers & 12 non-walkers), aged 61 to 85 years (mean = 70.7) were enrolled. The themes of environmental determinants of neighborhood walking that emerged included: pleasant objects to observe while walking such as greenery, wildlife, parks, and water; presence of others in the immediate vicinity; safety from crime; weather; presence of a track or trail and places to rest, eat, or use the bathroom; adequate lighting; loose dogs; vacant lots; abandoned buildings; obstacles in the walking path; and sidewalk maintenance. Walkers reported using strategies to overcome barriers such as walking early in the day, walking with a partner, and combining walking with stops such as restaurants. Conclusions: Several important determinants for walking and strategies for managing barriers emerged for this sample. This study begins to examine strategies to overcome environmental barriers that can be used to increase walking. Further research is needed to identify which environmental characteristics are most salient and determine the effective strategies used by older, urban African American adults to walk in their neighborhoods.

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Sedentary Activity Is Independently Associated with Endothelial Dysfunction

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Introduction: Individual sedentary activities such as television viewing are associated with increased cardiovascular risk. However, there is limited literature regarding the role of total sedentary activity and specific sedentary activity in cardiovascular risk or the physiological mechanisms through which this risk occurs. The effect of physical activity on cardiovascular risk has been researched and reported; however, sedentary activity is not simply the inverse