

# **AI-powered Nutrition Analyzer for Fitness Enthusiasts**

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## **PRE-REQUISITE:**

To complete our project, we must have knowledge of the following. We need to have basic knowledge of the following cloud services:

- IBM cloud
- IBM Watson
- IBM Cloudant DB
- Deep Learning , CNN.

## **GITHUB ACCOUNT :**

- Open <https://github.com> in a web browser, and then select Sign up. Enter your email address.
- Create a password for your new GitHub account, and Enter a username, too. Next, choose whether you want to receive updates and announcements via email, and then select Continue.
- Verify your account by solving a puzzle. Select the Start Puzzle button to do so, and then follow the prompts.
- After you verify your account, select the Create account button. Next, GitHub sends a launch code to your email address. Type that launch code in the Enter code dialog, and then press Enter.
- I have created my Github account with the email id IBM-Project-45886-1660733005.

## **INSTALLATION OF IDE'S:**

Python is available from its website [python.org](https://python.org). Once there, hovers your mouse over the Downloads menu, then over the Windows option, and then click the button to download the latest release.

## **LITERATURE SURVEY:**

### **REVIEW- 1**

#### **Title Of The Paper:**

High fat diet of endogenous thrombin generation in plasma during obesity.

#### **Name Of The Author:**

Caroline Sanchez [Orateur] (1), Pierre Morange (1), Matthias Canault (1), Stephane Tanguy (2), Dorothee Faille (1), Anne Dutour (1), Michel Grino (1), Marie-Christine Alessi (1).

#### **Problem Description:**

Association between obesity, cardiovascular disease, and venous thromboembolism could partially be explained by a hyper coagulable state. In addition, it is still controversial which of obesity, diet or metabolic disturbances are the main factors in the changes in the coagulation system. In this study, they investigated endogenous thrombin potential (ETP) during high-fat-diet (HFD) induced obesity.

## **REVIEW 2:**

### **Title Of The Paper :**

Moderate exercise protect the heart.

### **Name Of The Author:**

Charlotte Farah [Orateur], Grégory Meyer, Sandrine Gayraud, Philippe Obert, Stéphane Tanguy, Cyril Reboul. EA4278 Université d'Avignon, Pôle sportif et de recherche, Avignon, France.

### **Problem Description:**

Chronic exercise training is recognized as a relevant cardio protective strategy against the myocardial ischemia reperfusion sensitivity. Some functional alterations of myocardial eNOS is classically involved in reperfusion injuries. However, today, despite this enzyme is a major target of exercise, its implication in exercise-induced cardio protection has never been challenged. Then the aim of this work was to evaluate whether eNOS could be central in the cardio protective effect of exercise on myocardial ischemia reperfusion injuries.

### **REVIEW 3:**

#### **Title Of The Paper:**

High energy fructose enriched diet.

#### **Name Of The Author:**

Zo Rakotoniaina [Orateur] (1), Fabrice Tranchida (1), Leopold Tchiakpé (2), Valerie Deyris (1) , France.

#### **Problem Description:**

The aim of this study was to investigate the long term effects of fructose enriched diet (FED) in the plasma fatty acid (FA) composition rats. Based on fasting hyper insulinemia, glucose intolerance and dyslipidemia, the young rats exhibited most of the metabolic syndrome characteristics at 10 weeks. Regarding dyslipidemia, the FED group showed increase levels of total cholesterol and triglyceride. Furthermore the plasma FA of the FED group showed about 2-fold increase in the monounsaturated fatty acids palmitoleic acid (C16:1n-7) and oleic acid (C18:1n-9), whereas the (n-6) polyunsaturated FA including linoleic and arachidonic acids (C18:2n-6, C20:4n-6) were about 2.5-fold lower. But after 30 weeks diet period, no changes for C16:1n-7 and C20:4n-6 compared to control were observed. This FED enhanced the adverse effects of the metabolic syndrome and may lead to an adaptive response on the FA profiles.

## **REVIEW 4:**

### **Title Of The Paper:**

Exercise adaption of the men over 50 years of age.

### **Name Of The Author:**

Thibaud Rozoy, Erwan Donal [Orateur], Gaelle Kervio, Frederic Schnell, Jean-Claude Daubert, Philippe Mabo, François Carre CHU RENNES, Cardiologie, Rennes, France.

### **Problem Description:**

We intend to describe the remodeling that occur due to intensive athletic activity in men .

Methods: We conducted a prospective analysis of 21 athletes • 15 sedentary healthy controls and 10 patients diagnosed with a left ventricular hypertrophy who were all over the age of 50. All subjects underwent a resting and a sub - maximal exercise echo cardiography in order to measure the left ventricular systolic and diastolic functions.

Results: Left ventricular (LV) volumes, which were similar at rest in the three groups, were higher in the athletes during exercise ( $p < 0.01$ ). Systolic ejection volumes and longitudinal global left ventricular strains were greater at rest in healthy subjects (athletes and controls) in comparison to those in LVH-patients ( $p < 0.01$ ). During exercise, the increase in longitudinal strain was higher in athletes than in the two other groups ( $p < 0.05$ ). Concerning left ventricular relaxation, septal  $e'$ - and lateral  $e'$ -waves were higher both at rest and during exercise in the group of healthy subjects in comparison to those in patients ( $p < 0.05$ ).

## **REVIEW 5:**

### **Title Of The Paper:**

Metabolic, oxidative and cardiovascular consequences .

### **Name Of The Author:**

Ahmed Habbout [Orateur] (1), Stéphanie Delemasure-Chalumeau (1), Carole Richard (2), Franck Chabot (1), Luc Rochette (1), Catherine Vergely (1), France.

### **Problem Description:**

Several studies in mice have shown that postnatal overfeeding (OF) induces permanent moderate increase of body weight in the adult life; however, cardiovascular repercussions of postnatal OF are less known. Methods: Immediately after birth, and during 3 weeks, litters of C57BL/6 mice were either maintained at 10 (normal-fed group, NF), or reduced to 3 in order to induce an OF situation. At weaning, mice of both groups received a standard diet. Measurements of phenotypic characteristics and metabolic parameters (cholesterol, insulin and leptin) were performed in the plasma at 7 months.

Tissue oxidative stress was assessed by Electron Paramagnetic Resonance in the heart using CP spin probe. Cardiac function was measured by echocardiography and the susceptibility to myocardial global ischemia and reperfusion was assessed ex vivo in isolated perfused heart.

### **Paper Reference:**

- C. L. Ogden, M. D. Carroll, B. K. Kit, and K.M.Flegal, "Prevalence of childhood and adult obesity in the United States,2011-2012," *Jama*, vol. 311, pp. 806-814, 2014.
- World Health Organization: fact sheets on obesity and overweight, Available at <http://www.who.int/mediacentre/factsheets/fs311/en/>.
- G. H. Beaton, J. Milner, P. Corey, V. McGuire, M. Cousins, E. Stewart, et al., "Sources of variance in 24-hour dietary recall data:implications for nutrition study design and interpretation," *American Journal of Clinical Nutrition*, vol. 32, 1979.
- J. Cade, R. Thompson, V. Burley, and D. Warm, "Development, validation and utilisation of food-frequency questionnaires—a review," *Public health nutrition*, vol. 5, pp. 567-587, 2002.
- R. Steele, "An overview of the state of the art of automated capture of dietary intake information," *Critical Reviews in FoodScience and Nutrition*, 2013.

