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Country: **Germany**

Titel of the project: **Berlin Beat of Running Study - Frequency of Atrial Fibrillation & Silent Stroke in Marathon Runners**

Project details

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Award amount: €100,000

The Berlin Beat of Running Study will investigate the frequency of new onset atrial fibrillation and of (silent) stroke in endurance runners before, during and after the Berlin Marathon 2011.

Background: Regular exercise is beneficial for cardiovascular health but a recent meta-analysis indicated that practicing endurance sport increases the risk of atrial fibrillation (AF) [Abdulla, Europace 2009]. Individuals with AF have a four- to fivefold increased risk of ischemic stroke, almost independently of the AF-type [Wolf, Stroke 1991; Nieuwlaet, EHJ 2008]. Patients with AF-related strokes have a poorer prognosis and a higher recurrence rate than stroke patients without AF [Marini, Stroke 2005]. Data on the frequency of AF or (silent) stroke during a marathon race are missing so far. Aims: To demonstrate an increased risk of AF and silent stroke in marathon runners and to increase public awareness of AF and stroke. Primary Hypothesis: Endurance sport increases the rate of AF episodes during marathon running. Secondary Hypothesis: Marathon running is associated with clinical silent ischemic stroke, especially in those athletes with AF. Methods: The "Berlin Beat of Running Study" is a prospective observational study. It will be conducted during the BMW-Berlin Marathon 2011 on September 25th. All 100 participants will wear a transportable ECG-recorder (CardioMem® CM-4000; Getemed® AG, Teltow, Germany) 24 hours before, during and 24 hours after the marathon. Before and after the marathon all participants will undergo brain MRI-examinations to detect (silent) strokes. Cardiac MRI will be performed on those athletes with newly detected AF or (silent) stroke to become aware of possible cardiac sources of embolism [Rustemli, Echocardiography 2007]. All participants will be followed up 1 year after the marathon. Inclusion Criteria: 30-80 years, at least 5 marathon runs <8 years, weekly running of ≥40 km. Exclusion Criteria: known AF, prior stroke, contraindication for MRI. Expected Results: The Berlin Beat of Running Study will (1) provide new insights into the frequency of occurrence of AF in athletes; (2) analyze the frequency of silent strokes during a marathon race and (3) increase the public awareness to AF and subsequent stroke. One hundred marathon runners will take part in the study and wear the campaign shirt. Over 40.000 participants of the marathon and more than 1 million spectators along the race track will get information about the "1 Mission 1 Million" campaign. Moreover, a documentary is planned for worldwide educational purposes focussing on the conduction and the results of the Berlin Beat of Running Study. Compliance with the requirements: (1) The BMW-Berlin Marathon is one of the world's largest marathons. Our cooperation with the Sport Club Charlottenburg ensures feasibility of the study and guarantees public awareness and visibility of the "1 Mission 1 Million" campaign. (2) The Center for Stroke Research Berlin (CSB) comprises all disciplines (Cardiology, Neurology, Neuroradiology) necessary for interdisciplinary research. (3) The CSB operates its own 3T MRI and has access to two additional 3T MRI research scanners. (4) The support of the Getemed® AG enables us to meet the technical requirements to detect AF. The CardioMem® ECG-recorder was successfully tested during the Berlin Marathon 2010.

Audience

Type

- AF Patients
- Healthcare professionals
- Carers of AF Patients
- General public
- Endurance runners

Location

Germany, Europe