**Final report on project execution in 2014**

1. **Basic project data**

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| Identification code | 69p21 |
| Project title | Stimulation of muscle strength using multiple joint isokinetic movements |
| Beneficiary | Palacky University, Olomouc, Faculty of Physical Culture. |
| Project investigator | Michal Lehnert, Doc. PeadDr. Dr. |

1. **Executed project activities**

Regarding the objective of the project the key activity involved stays at partner universities.

Stay of the Czech project investigators in Austria

Czech partners stayed at the University of Salzburg from 2 to 5 December 2014. This stay was attended by the project investigator and a member of the project team Mgr. Zuzana Xaverová (another member Mgr. Petr Chvojka terminated his doctoral study at the Faculty of Physical Culture and did not take part in the trip). During the stay the project team together with the Austrian partner worked on the outcomes of the project research, particularly on the methodology and results of the first descriptive outcome, and on the strategy of publishing further outcomes. Also, a practical workshop was held to address challenging aspects of the measurement methodology using the leg-press module. During the theoretical workshop both parties negotiated further collaboration. Both parties agreed on further topics and confirmed their interest in future cooperation.

Total number of stay days of the Czech investigator: 4 days, total number of foreign trips 1.

Stay of the Austrian project investigator in the Czech Republic

The first stay of our colleague Johanness Dirnberger at the Faculty of Physical Culture, Palacky University, took place from 21 to 24 May 2014. During the stay, our joint work focused on detailing the measurement methodology using the IsoMed 2000 instrument – leg-press module, particularly on measurement standardization. We discussed issues such as the speed and extent of movement, muscle activity regimes, development of training programme alternatives in terms of the mentioned aspects, and the selection of suitable control parameters for the research study. We also organized a workshop for other staff at the Faculty of Physical Culture, Palacky University.

The second stay of our colleague Johanness Dirnberger at the Faculty of Physical Culture, Palacky University, took place from 2 to 4 July 2014. During the stay, our joint work focused on further detailing of the measurement methodology using the IsoMed 2000 instrument – leg-press module, particularly on the selection of suitable trigger points. Our Austrian colleague also performed a demonstration (and also software upgrade upon consultation with the German manufacturer) of using the software for processing the results of isokinetic measurements.

Total number of stay days of the foreign investigator: 7 days, total number of foreign trips 2.

1. **Project outcomes**
* New findings about and practical experience with measurement using the IsoMed 2000 instrument at the Faculty of Physical Culture, Palacky University – leg-press module.
* Improved methodology of measurement using the IsoMed 2000 instrument at the Faculty of Physical Culture, Palacky University – leg-press module for the purposes of research studies and measurement of various population groups.
* Development of a training programme and its application in an experimental study involving top-level female athletes.
* New findings about the effects of isokinetic training with multiple joint movements in female athletes in the area of muscle strength stimulation in athletes with possible application in physical fitness in other population groups.
* Scientific publications to be presented in professional periodicals of international significance (March 2015) and at an international conference in 2015.
* During the project we established collaboration with an Austrian partner, who has long-lasting experience with measurement using the IsoMed 2000 instrument. Preconditions were established for a research study addressing a topical issue, whose methodology corresponds with the requirements for publishing in professional periodicals of an international nature.
* Another outcome of the project is an agreement on continued collaboration, and interest of other Austrian colleagues in participation (prof. Wagner, dr. Köesters).

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| In Olomouc on 12 January 2015 |  |
| Project investigator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |