



Preliminary results of the 2002-2005 study

A three-year study entitled "Evaluation of a programme in the community to improve balance and prevent falls and their effects among seniors" began in 2002.

Thanks to a grant from the Canadian Institutes of Health Research, the Montréal Public Health Department (DSP) undertook this study to evaluate the *STAND UP! Programme*. The study is being conducted in collaboration with the public health departments in Laval and Montérégie, as well as with university researchers

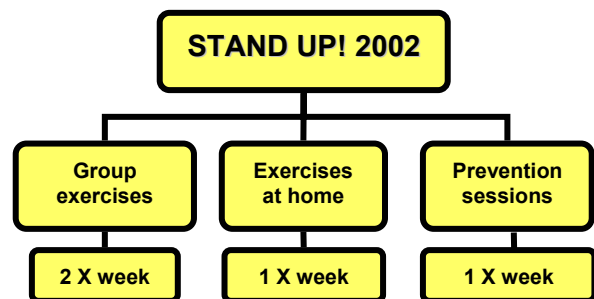
Data collection ended in October 2003. The information collected has not been analysed in its entirety but some results are available at this time. In this special edition of our newsletter, you will find preliminary results of some of the research questions. You will also find the list of people and organisations who have contributed to the study.

The research

The goal of the study is to look at the evolution of balance and strength in seniors who participate in the 2002 edition of STAND UP!. The purpose of this programme is to prevent falls among seniors who live at home. It is offered in the community by CLSCs (local community services centres), community groups, and senior citizen centres. The programme lasts 12 weeks and consists of three components:

- group exercises to improve balance and muscle strength;
- exercises at home; and
- information sessions on fall prevention.

A multifactorial programme



The goals are:

- to improve balance and leg strength;
- to develop the ability to make adjustment in the home and adopt safe behaviours;
- to enhance a feeling of effectiveness related to fall prevention;
- to help maintain bone density;
- to encourage regular practice of physical activity.

*P.I.E.D. is the French name for the STAND UP! Programme

Our data analyses provide answers to the following questions:

- Who registered in the STAND UP! Programme?
- What are the rates of participation in the group exercise component for seniors registered in the programme?
- Do organisations offer the programme as envisioned by its designers?
- By the end of the programme, have participants improved their balance, mobility and muscle strength?

Over 30 organisations collaborated in recruiting seniors and evaluating participants, as well as in managing and running the programme.

Who could participate in the study?

The target population for the study was the same as that for which the STAND UP! Programme was created, that is, seniors:

- aged 60 or over;
- living at home;
- concerned with their balance or worried about falling;
- interested in participating in group exercises and being able to do them.

HOW IS THE STUDY BEING CONDUCTED?

Seniors in the study were divided into two groups: an experimental group and a control group.

The goal was to compare the results of the experimental group with those of the control group.

In all, 98 older adults were recruited into the experimental group by 10 organisations to participate in the STAND UP! Programme. Seven organisations recruited 102 seniors for the control group. This group was offered

to participate in the STAND UP! programme only at the end of the study.

All seniors participated in four evaluation sessions over a period of a year:

- time 1 (T_1): at study onset;
- time 2 (T_2): at 3 months;
- time 3 (T_3): at 6 months;
- time 4 (T_4): at 12 months.

Seniors in the experimental group followed the STAND UP! Programme between the first and the second evaluations.

Of the 200 people registered at the beginning of the study, 84% were still in the study at the fourth evaluation session. This rate of participation is excellent for this type of study.

Questionnaires

During the four evaluation days, all seniors answered questions on:

- their demographic characteristics (e.g. age, level of education);

Research design



- their health (e.g. perceived state of health, medications);
- their concerns with regard to falls (e.g. fear of falling, history of falls, self-evaluation of balance);
- the physical activities they practice.

Tests

Several tests were also administered by physiotherapists to measure vigour, balance, mobility and strength.

ELEMENTS OF RESPONSE TO THE RESEARCH QUESTIONS

Who registered in the STAND UP! Programme?

In all, 98 participants were recruited to the STAND UP! Programme. They reported having heard about STAND UP!:

- during another activity (33%);
- by word of mouth (18%);
- from a professional (18%);
- from a local paper (16%);
- from a poster or flyer (15%).

For 43% of seniors, this was the first time they were participating in an activity of the organisation offering the STAND UP! Programme.

Analyses show that 87% of seniors recruited were concerned about falling or worried about their balance, a very good result since these participants corresponded to the targeted clientele.

Rates of participation in the programme

Ten per cent of participants dropped out of the STAND UP! Programme. Half of them did so during the first two weeks of the programme. The rate of attendance to the exercise sessions was 78%, which is very high for a community programme.

Moreover, 78% of participants reported having exercised at home more than once a week during the course of the programme.

Do organisations offer the programme as envisioned by its designers?

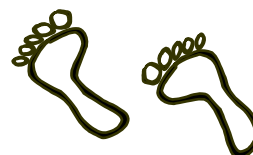
Within the framework of this study, the STAND UP! Programme was offered by CLSCs (local community services centres) and community organisations. Several groups worked in partnership with institutions to implement the programme. Sessions were led by health professionals: four physiotherapists, an occupational therapist, five physical rehabilitation therapists, a physical educator and a community organiser (co-leader). Two methods were used to determine how the programme had been offered:

- a questionnaire for heads of organisations;
- an observation visit by a research assistant to every group offering the STAND UP! Programme

Overall, the programme was implemented as recommended in the STAND UP! Programme guide. Session leaders attended a seven-hour training session offered by the Public Health Department. The essential components of the exercises were properly applied. For example, session leaders

- encouraged individual improvement;
- corrected participants' postures during the exercises;
- gradually increased exercise intensity;
- encouraged participants to have fun during the sessions.

However, a few session leaders admitted they forgot to encourage participants to do their exercises at home, as is recommended in the guide.



EFFECTS ON BALANCE

Does the STAND UP! Programme improve seniors' balance?

Several tests were used to measure balance:

- standing on one leg with eyes open (Unipodal);
- standing on one leg with eyes closed (Unipodal);
- standing on a foam cushion with eyes closed;
- placing one foot in front of the other (Tandem);
- stretching the arms forward (Functional Reach);
- stretching one arm out to the side (Lateral Reach);
- walking on a line as quickly as possible (Tandem walk).

Table 1 shows the evolution of the balance of seniors in the STAND UP! group and in the control group, between T_1 and T_2 . Plus (+) signs indicate that balance improved while minus (-) signs denote that it deteriorated. Results reported for tests evaluating both sides of the body pertain only to the left side. For example, during the

second evaluation session (T_2), seniors from the STAND UP! group could stand on one leg with eyes open an average of 5.3 seconds longer than during the first evaluation session (T_1).

We note that for most balance tests, the STAND UP! group improved more than the control group. Moreover, statistical analyses demonstrated that for the three tests with an asterisk, the difference between the STAND UP! group and the control group is statistically significant.

Table 1: Balance

Test	Evolution between T_1 and T_2	
	STAND UP! group	Control group
Unipodal (eyes open)	+ 5.3 seconds	- 2.4 seconds
Unipodal (eyes closed)	+ 0.7 seconds	- 0.2 seconds
Standing on a piece of foam	+ 8.0 seconds	+ 5.2 seconds
Tandem	+ 5.8 seconds	+ 2.7 seconds
Functional reach	+ 0.7 cm	- 0.1 cm
Lateral reach	+ 0.8 cm	+ 1.2 cm

+ = improvement

- = deterioration

RESULTS FOR MOBILITY AND MUSCLE STRENGTH

Does the STAND UP! Programme improve seniors' mobility?

To measure mobility, participants had to do the following test:

- walk on a line as quickly as possible (Tandem walk).

Table 2 shows that the mobility of STAND UP! Programme participants improved more than that of seniors in the control group. The difference is statistically significant.

Table 2: Mobility

Test	Evolution between T1 and T2	
	STAND UP! group	Control group
Tandem walk	+ 4.9 seconds	+ 2.9 seconds

+ = improvement - = deterioration

Does the STAND UP! Programme improve seniors' muscle strength?

Two tests were used to measure muscle strength:

- sit-to-stand (getting up from a chair 5 times, as quickly as possible);
- lying on the ground and lifting the leg sideways (abductor strength, measured with modified sphygmomanometer).

Data collected for the latter test are not conclusive, since several seniors were unable to perform this test.

Data in Table 3 demonstrates that participants in the STAND UP! group improved their muscle strength more than people in the control group. However, the difference is not statistically significant.

Table 3: Muscle strength

Test	Evolution between T1 and T2	
	STAND UP! group	Control group
Sit-to-stand	+ 1.2 seconds	+ 0.6 seconds
Abduction	Inclusive data	

+ = improvement - = deterioration

Results, in summary

- ✓ Recruitment methods reached a varied clientele worried about falling or concerned with balance.
- ✓ Participation rates for the STAND UP! Programme group exercises are very high.
- ✓ Organisations offered the programme as recommended by its designers.
- ✓ The STAND UP! Programme improved the balance and mobility of participants.

Results to come

Data analysis is ongoing. This information will shed light on the medium-term effects of the programme. Future research questions include:

- How does the practice of physical activity change once the programme has ended?
- How does balance evolve once the programme has ended?
- What individual and organisational factors are associated with the effects?
- Is it possible to see an effect on the incidence of falls?

A summary of these results will be included in a future edition of *Empreinte de P.I.E.D.*

MANY THANKS!

Research team

The team developed the research design and analysed the data collected.

- Yvonne Robitaille, principal investigator, DSP de Montréal.
- Sophie Laforest, Université de Montréal.
- Francine Trickey, DSP de Montréal.
- Nicole Damestoy, DSP Laval.
- Lise Gauvin, Université de Montréal.
- Hélène Corriveau, IUG Sherbrooke.
- Serge Nault, physician.

Data collection and processing team

- Manon Parisien, organiser of the evaluation days and research assistant.
- Carole Genest, organiser of the evaluation days and research assistant.
- Jennifer Duplantie, organiser of the evaluation days and research assistant.
- Isabelle Nadeau, organiser of the evaluation days.
- Michel Fournier, statistician and analyst.
- Martine Comeau, research technician.
- Annick Landreville, Tehmina Akulyan, Louise Legendre and Lucie Marin, secretarial work and follow-up of participants.

Collaborators

Many individuals and organisations collaborated in the study. We thank them for their enthusiasm, thoroughness and flexibility!

Participants

The research team would like to thank all the seniors who participated in this study. For reasons of confidentiality, they cannot be identified.

Partners

- Carrefour Montrose
- Centre communautaire de Longueuil
- Centre de jour Angélica
- Centre du Vieux-Moulin
- CLSC des Faubourgs
- CLSC Hochelaga-Maisonneuve
- CLSC du Marigot
- CLSC Montréal-Nord
- CLSC Olivier-Guimond
- CLSC René-Cassin
- CLSC Rosemont
- CLSC Ruisseau-Papineau
- CLSC Ste-Rose
- CLSC Lasalle
- Club de l'âge d'or Greenfield Park
- Cummings Centre
- DSP de la Montérégie
- DSP de Laval
- Résidence Edmond-Hamelin
- Résidence Havre des Îles
- Résidence Mont-Carmel
- Résolidaire

Interviewers (evaluation days)

- Jennifer Duplantie
- Louise Dussault
- Louise Grenier
- Pauline Lachance
- Lise Lévesque

Physiotherapists for balance tests

- Martine Bertrand, Hôpital Charles-Lemoyne
- Paola Campana, IUG Montréal
- Sophie Dancause, private practice
- Lucie Dubois, private practice
- Linda Fréchette, private practice
- Carole Gagnon Pedicelli, Vigi Santé
- Michel Laberge, CH St-Eustache
- Dorothee Lepage, Foyer Dorval
- Joanne Minelga, St. Anne's Hospital
- Mireille Muller, private practice

- Jean Parent, Villa Medica
- Monique Roberge, Hôpital Charles-Lemoyne
- Leslie Roy, St. Anne's Hospital
- Guylaine Sauvé, The Lindsay Rehabilitation Hospital
- Michel St-Amand, The Lindsay Rehabilitation Hospital
- Gilles Vaillancourt, private practice

STAND UP! Programme session leaders

- Nicole Bernier, physiotherapist
- Véronique Caillet, physical rehabilitation therapist

- Mélanie Farcy, physical rehabilitation therapist
- Sylvain Gignac, physiotherapist
- Cédric Grenier, physical educator
- Céline Lajoie, physical rehabilitation therapist
- Lucie Leblanc, physiotherapist
- France Lussier, physiotherapist
- Agnès Martin, occupational therapist
- Stéphanie Michaud, physical rehabilitation therapist
- Caroline Thibeault, physical rehabilitation therapist
- Pierre Meehan, community organiser (co-leader)

OTHERS

Training for session leaders

The Montréal Public Health Department offers training to professionals (physiotherapists, occupational therapists, physical rehabilitation therapists, kinesiologists) interested in leading STAND UP! Programme sessions. The next training session will take place at the Public Health Department on Wednesday, 1 September 2004. Please register before 25 August by calling Louise Legendre at (514) 528-2400, extension 3409, or by e-mail at: llegendre@santepub-mtl.qc.ca. For further information, visit our Web site: www.santepub-mtl.qc.ca/Aines/programmechute/Formation.html.

information as well as your address to Carole Genest by telephone at (514) 528-2400, by e-mail at cgenest@santepub-mtl.qc.ca or send it to the following address: 1301 Sherbrooke Street East, Montréal, Quebec H2L 1M3.

Stand Up!

As we announced in the previous newsletter, the STAND UP! Programme animation guide, 2003 edition is now available in English. To obtain an order form, please call (514) 528-2400, extension 3646.

Would you like to share your experiences?

If you have experimented with including new exercises in the STAND UP! Programme or made an interesting discovery about fall prevention, perhaps you would like to share this information with readers of this newsletter. If so, please pass on this



Colloquium on fall prevention in institutions

Title: Falls among seniors in institutions, a question of balance?

Organised by the: Institut universitaire de gériatrie de Montréal.

Objective: To understand the issue of falls among elderly people in hospitals or homes, reduce their incidence and limit their consequences.

When: Friday, 1 October 2004

Place: Centre Mont-Royal
2200 Mansfield Street, Montréal

Registration information: Suzanne Prévost,
(514) 340-2800, ext., 3145. E-mail:
suzanne.prevost.iugm@ssss.gouv.qc.ca

Cost: \$200, before 3 September, \$225 after that date; Students: \$100.

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Cette brochure est également disponible en français

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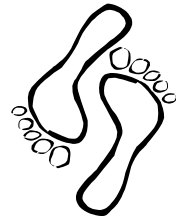
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