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## Content

Editorial Office ..... 3

### Editorial

**Faresjö T, Persson K**  
Something special again! ..... 4

### Abstract section

#### *Graduate School in Biomedicine*

**Eriksson C**  
Neuritogenic influence of tooth pulp tissue on rat trigeminal ganglia  
*in vitro* ..... 5

#### *Medical Programme*

**Andersson E S**  
Molecular Heterogeneity of Chicken Oligodendrocytes ..... 6

**Delvert P**  
Studies of Angiotensin Converting Enzyme (ACE)-inhibitor  
effects on neutral endo-peptidase (NEP) in human lung tissue ..... 7

#### *Nursing Programme*

**Wilhelmsson S**  
Psychosocial work environment and job satisfaction -  
development of a questionnaire ..... 8

#### *Occupational Therapy Programme*

**Björkman B, Ludvigsson L**  
Consumer satisfaction among elderly in a municipal day care center ..... 9

**Ekbladh E, Hedlund M**  
The Work Environment Impact Scale (WEIS) - a first study ..... 10

**Wressle E**  
Rehabilitation of the geriatric stroke patient ..... 11

#### *Physiotherapy Programme*

**Kihlstrand AK**  
The implication of working as a physiotherapist in patients' home ..... 12

**Sundgren P, Svensson S**  
Five to seven years follow-up study after anterior cruciate ligament  
reconstruction ..... 13

### Science and students

**Conference advertisement:**  
Studenternas Medicinska Rikstämma, May 1998 ..... 14

# Student Journal of Health Sciences

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## - Editorial -

### Something special again !

There has never in history been so many active researchers as there are today and we have never had access to so many medical journals as we have today. New medical journals are continuously presented in a great variety of research fields all over the world.

So, now what's the purpose to introduce yet another medical journal. Firstly, this journal has two main features that makes it different from most other journals in the field of health sciences. The items and abstracts presented in this journal are solely based on research made and written by students. That's why it is called student journal. There are, of course, other examples of student journals in the world, but the articles presented in these are often written by teachers and directed to the students: a traditional one-way communication from the tutor to the student. But we are convinced that students might also contribute to the growth of scientific knowledge in health sciences.

Another main feature that makes this journal absolutely special, as you by now must have noticed, is that the journal is only electronically published on the internet by Linköping University Electronic Press. You can easily make your own paper copy of an issue or a specific abstract in the journal if you wish, just print it out.

The decision to publish the journal electronically only, reflects the fact that an international revolution is now occurring in publishing.

The same minute an issue of this journal is released it can be read not only by students and teachers at Linköping University, but all over the world. So, we say hello to our potential readers in the rest of Europe, and other populated areas of the world - Africa, America, Asia and Australia.

The Faculty of Health Sciences in Linköping, a medium sized town in the south-east part of Sweden, was started up in 1986. Since it's start our faculty has tried to established a special profile that, in many ways, makes it different from other Swedish medical faculties. The most important special cornerstones in this respect are: an extensive use of problem-based learning, an integrated and multiprofessional training and a training that to a great extent is community-based and practised in the primary health care. All university-level educational programmes in the field of health sciences are organisationally integrated in the Faculty of Health Sciences at Linköping University.

The abstracts published in this issue of the journal are all written by students at the Faculty of Health Sciences at the Linköping University and approved for publishing by the journal's scientific advisory board.

**Faresjö T**, Managing Editor

**Persson K**, President of the Student Union

## - Abstract section -

### Neuritogenic influence of tooth pulp tissue on rat trigeminal ganglia *in vitro*

Authors: **Eriksson C**, Graduate School in Biomedicine, Linköping University.  
Tutor: Hildebrand C, professor, Division of Cell Biology, Dept of Biomedicine and Surgery, Linköping University.

#### Background

During the development of the vertebrate nervous system, a given target organ is able to attract and support the survival of afferent neurons through production of neurotrophic and other factors, which are taken up by the axonal terminals and retrogradely transported to the cell bodies. The mammalian tooth pulp is a suitable system for experimental studies of neuron-target tropism and/or trophism. The pulp is anatomically well defined and becomes innervated by a specific set of axons relatively late during development. Available evidence suggest that one or more molecular factors produced by pulpal cells regulate the ingrowth of nerve fibres from the local nerve trunk to the tooth pulp.

#### Aim of the study

In order to find out if tooth-derived molecular factors indeed are involved in the regulation of nerve growth to developing rat tooth pulps, trigeminal ganglia (TGs) from perinatal rat pups were co-cultivated *in vitro* with pulpal explants or filtrates from homogenates of immature rat mandibular molar pulps.

#### Material and methods

TG explants were prepared from newborn Sprague-Dawley (SD) rat pups. Pulpal explants were collected from first and second molars from 1-2 weeks old SD rat pups. The TG and pulpal preparations were co-explanted in plastic dishes containing a hydrated collagen matrix prepared from adult rat tail tendons. The explants were fed Opti-MEM with N-2 supplement.

In some cases, the pulpal explant was replaced by an acellular pulpal filtrate. In some TG cultures nerve growth factor (NGF) was added, and in some co-cultures we added antibodies against NGF or antibodies against brain derived neurotrophic factor (BDNF). All cultures were evaluated after 3 days incubation with 5% CO<sub>2</sub> at 37°C.

#### Results

In control cultures containing a TG only, or a TG and a heat-treated pulp, no neurites formed. Addition of NFG to such control cultures elicited neurite outgrowth. When trigeminal ganglia were influenced by a pulpal explant or a filtrate *in vitro*, neurites were produced from the ganglionic explant. Addition of antibodies against NGF did not affect neurite outgrowth from TG explants. However, addition of antibodies against brain derived neurotrophic factor did influence the character of the neurite outgrowth. Thus rat molar tooth pulps do influence neurite outgrowth from rat TGs *in vitro*.

#### Conclusions

We conclude that tooth pulps produce neurite-promoting molecular factor(s) composed of soluble and heat-labile molecules.

Key words: Neurite outgrowth, rat, tissue culture, tooth pulp, trigeminal ganglion.

## Molecular heterogeneity of chicken oligodendrocytes

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Tutors: Hildebrand C, professor, Division of Cell Biology, Dept of Biomedicine and Surgery, Linköping University.

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### Background

Oligodendrocytes are the myelin forming cells in the CNS. Classical investigators have reported that the oligodendrocyte population includes 4 varieties in terms of process numbers and branching pattern, types I-IV (1). Hortega's view has been confirmed by recent electron microscopic data, which show that the morphology of oligodendrocytes related to large early myelinating fibres differs from that of oligodendrocytes myelinating small fibres at a late stage of development. We have recently detected a novel molecule (T4-O) in the chicken. After application of a polyclonal T4-O antiserum to cryostat sections from the chicken CNS, we noted that a subgroup of white matter oligodendrocytes had become specifically labelled

### Aim of the study

Our aim was to describe the occurrence and cellular localization of T4-O immunoreactivity in the CNS of the adult chicken. An additional aim was to find out if this molecule can be found in the CNS of some other vertebrate species.

### Material and methods

For this study we used adult chickens, cichlid fishes, african clawed frogs, turtles, Sprague Dawley rats and a New Zealand White rabbit. The rats and the rabbit were perfused with Tyrode's solution and 4% PFA in a 300 mOsm phosphate buffer. CNS tissue including the rostral portion of the spinal cord was dissected out and fixed by immersion or postfixed and then rinsed in a buffer. For the immunohistochemical analysis we used the alkaline phosphatase or immunofluorescence technique. Transverse sections from the spinal cord and sections from various regions of the chicken brain were cut in a cryostat. The sections were incubated with a primary antibody over night and then with either an alkaline phosphatase-conjugated or a FITC/TRITC-conjugated secondary antibody.

### Results

The T4-O immunoreactive cells are enriched in the ventral funiculus of the spinal cord, being colocalized with large fibres, which myelinate at an early stage of development. Double staining with T4-O antiserum and anti-GFAP or the lectin BSI-B4 revealed that T4-O immunoreactive cells are not astrocytes or microglia. Therefore they must be oligodendrocytes. Staining with anti-HSP 108, a general marker for avian oligodendrocytes, indicated that the T4-O immunoreactivity is largely restricted to a ventrolateral subgroup of oligodendrocytes. Immunoreactivity indicating T4-O could not be detected in sections from fish, frog, turtle, rat and rabbit spinal cord.

### Conclusions

These results suggest the presence of a fibre size-related molecular heterogeneity among white matter oligodendrocytes in chicken CNS. It seems that the T4-O molecule is preferably located to the type IV oligodendrocyte of Hortega. Therefore we suggest that it should be called the T4-O molecule. A heterogeneity among oligodendrocytes might, conceivably, explain why some disorders of myelin metabolism, e.g. Krabbe's disease, affect some CNS areas more than others.

Key words: Chicken, heterogeneity, immunohistochemistry, oligodendrocyte, spinal cord.

### References

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# Studies of Angiotensin Converting Enzyme (ACE)-inhibitor effects on neutral endo-peptidase (NEP) in human lung tissue

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## Background

ACE-inhibitors (ACE-i) are one of the first choices in the treatment of hypertension and congestive heart failure. They have relatively few side-effects, except from a persistent dry cough in some individuals (reported in a frequency from 0.2 to 33%). This cough is believed to be caused by an inflammatory state in the lungs. ACE is involved in the metabolism of potent inflammatory mediators, like bradykinin and substance P. Inhibition of the enzyme ACE gives an accumulation of these proinflammatory mediators in, for example the airways. Different ACE-i's have different proinflammatory effects. Neutral endopeptidase (NEP) is a peptidase that was discovered in the early eighties. This peptidase is widely distributed in most organs. It is also involved in the degradation of inflammatory mediators like bradykinin and substance P. So both ACE and NEP are involved in the inhibition of inflammatory mediators in the lung, being differently distributed in the parenchyma.

## Aim of the study

The aim of this investigation was to study whether ACE-inhibitors have an inhibitory effect on NEP in human lung tissue, and if so, to compare if different ACE-inhibitors lower NEP's activity in different ways.

## Material and methods

The NEP activity was measured according to the method described by Florentin et al (1). They synthesized a fluorescent peptide, N-Dansyl-D-Ala-Gly-Phe (pNO<sub>2</sub>)-Gly (DAGNPG), which is a selective substrate for NEP. NEP cleaves the peptide into two parts, giving an increase of the fluorescence. The ACE-i enalaprilat was added to half the test tubes, and another ACE-i, cilazaprilat, was added to the rest of the test tubes, both in increasing concentrations: from  $3 \times 10^{-10}$  M to  $3 \times 10^{-8}$  M. The increase in fluorescence was measured in a spectrofluorometer.

## Results

The lung tissue examined was collected from 6 different patients, after lung surgery for different reasons. Both enalaprilat and cilazaprilat gave a dose dependent decrease in fluorescence. The fluorescence fell dramatically upon addition of the NEP-inhibitor phosphoramidon. With enalaprilat there is a significantly inhibited NEP activity already at the concentration  $10^{-8}$  M ( $p=0.026$ ). At the highest concentration, the NEP activity fell to 5.40 nm/ug protein, from an initial value of 14.75 nm/ug ( $p=0.01$ ). Cilazaprilat decreased the activity from 14.75 to 5.72 nm/ug protein ( $p=0.006$ ) at the concentration  $3 \times 10^{-8}$ . There were no significant differences between the two ACE-inhibitors used.

## Conclusions

Altogether, the show that NEP is present in human lungs and that ACE-inhibitors enalaprilat and cilazaprilat decrease its activity. This study also shows that a dose dependent inhibition of the fluorescence is caused by ACE-i. Only six different lung pieces have been studied in this work. For a more reliable study of the effects of enalaprilat and cilazaprilat, and proof of possible differences between the two ACE-i, more subjects must be studied. Hopefully, this study can give valuable input for further development of more specific ACE-inhibitors, that are not affecting NEP.

Key words: Angiotensin Converting Enzyme, cough, fluorescence, lung tissue, neutral endopeptidase.

## References

1. Florentin D, Sassi A, Roques BP. A highly sensitive fluorimetric assay for "enkephalinase", a neutral metalloendopeptidase that releases Tyr-Gly-Gly from enkephalins. *Anal Biochem* 1984; 141: 62-69.

# Psychosocial work environment and job satisfaction - development of a questionnaire

Author: **Wilhelmsson S**, Master of Science in Nursing, Linköping University.

Tutor: Ek A-C, professor, Division of Nursing Science, Dept of Medicine and Care, Linköping University.

## Background

The personal doctor reform in primary care in Sweden has led to changes in general practitioners (GPs) and district nurses working conditions. It is important to follow the personnel's experience of the organisational changes since these influence both the personnel's health and the patients satisfaction with the care. When measuring psychosocial working conditions the instrument used is often a questionnaire with a combination between earlier used questions and questions constructed for the specific purpose.

## Aim of the study

The aim of this study was to develop and test a questionnaire measuring psychosocial working conditions and job satisfaction in GPs and district nurses after the implementation of the personal doctor system in primary care.

## Material and methods

Before the construction of the questionnaire earlier developed questionnaires were studied and some interviews with GPs and district nurses were carried out. Finally, a questionnaire comprising 81 questions, 79 closed-ended and 2 open-ended, was developed. The questionnaire was divided into three different parts. The first part was the demographic data relevant for the study, the second part measured how the working conditions have been influenced by the personnel doctor reform, and the third part contained questions about psychosocial working conditions and job satisfaction in general.

From a register, kept by the company Pharmaceutical Statistics Inc. Corp., 114 addresses to 59 GPs and 55 district nurses were received. The questionnaire was mailed to the participants and after one reminder it was returned by 45 GPs and 49 district nurses. Three GPs and six district nurses

could not be included in the study because they were no longer actively working in these professions. The overall participation rate was 80%.

## Results

For validation of the instrument a factor analysis was carried out. The Principal Component method with orthogonal rotation and eigenvalue  $\geq 1$  generated six factors accounting for 69% of all item variance in the second part of the questionnaire. The reliability was calculated with Cronbach's alpha and was overall 0.88 and 0.70 - 0.89 for the different factors. The factors were labelled professional competence, comprehensive view, stimulation at work, fellowship at work, control and demand on the individual. From the third part of the questionnaire the factor analysis revealed seven factors with a total item variance of 66%. The Cronbach's alpha was overall 0.93 and 0.68 - 0.88 for the different factors. The seven factors were labelled workload, social support at work, physical strains, autonomy, quality in care, control in daily work and relaxation.

## Conclusions

The validation and reliability tests show that the instrument must be considered having a high construct validity and high internal consistency. After minor changes the questionnaire is going to be used in a large study among GPs and district nurses.

Key words: District nurses, GPs, job satisfaction, psychosocial working conditions, primary care.



# Consumer satisfaction among elderly in a municipal day care center

Authors: **Björkman B, Ludvigsson L**, Occupational Therapy Programme, Linköping University.

Tutor: Kjellberg A, teacher, Occupational Therapy, Dept of Neuroscience and Locomotion, Linköping University.

## Background

Since the "Elderly reform" was carried out in 1992 the municipalities, among other things, have a greater responsibility for the care of elderly in the society. The authors interest in the elderly, their life situation and what kinds of activities the municipalities can offer to the elderly, led to a request from the municipality of Linköping to participate in the ongoing quality assurance work.

## Aim of the study

The aim of the study was to measure consumer satisfaction among elderly in a municipal day care center, as part of the quality assurance work in the municipality of Linköping.

## Material and methods

First an interview form to measure consumer satisfaction was developed from background studies and observations in place. The form came to contain some structured questions and a large number of open questions. All elderly retired people who fulfilled certain established criteria and who visited the day care center during a period of two weeks, totally 38 persons, were interviewed. Obtained data were treated partly qualitatively, partly quantitatively.

## Results

The result shows that the day care center is a needed and essential place for the elderly. The result in the study points out a need among the elderly that day care centers in different shapes might be established.

The majority of the visitors state that they have gained new social acquaintances by visiting the day care center. The visitors were all satisfied with the staff. Yet most of the interviewed visitors felt that the staff had difficulties in being sufficient because a group of elderly among the visitors had become disordered and more demanding. This group of elderly was not able to answer the questions in our study, mainly because of dementia. The study indicates a need for municipal activity forms with larger possibilities to take different conditions and individual needs of the elderly into consideration in the daily care activities.

## Conclusions

The result shows a great deal of consumer satisfaction among the elderly with the day care center. The principal reason for the elderly to visit the day care center was to meet other people and have somebody to talk with. In several ways the result in this study shows that the day care center plays a very important role for the visitors social life.

Key words: Activities of Daily Living (ADL), aged, gerontology, quality of life, retirement.

## The Work Environment Impact Scale (WEIS) - a first study

Authors: **Ekbladh E, Hedlund M**, Occupational Therapy Programme,  
Linköping University.

Tutor: Haglund L, lecturer, Occupational Therapy, Dept of Neuroscience and Locomotion,  
Linköping University.

### Background

The Work Environment Impact Scale (WEIS) is a semi-structured interview and rating scale designed to assist the therapist to gather information on how individuals with physical or psychosocial disabilities experience and perceive their work environments. WEIS is based on The Model of Human Occupation and has been translated into Swedish (1). The WEIS is organized around 17 environmental factors, such as the physical space, social contacts, temporal demands, objects utilized, and daily job function. Each environmental factor is scored with a fourpoint rating scale, which is used to indicate how the environmental factor impacts the worker's performance, satisfaction, and physical, social and emotional well-being. The WEIS is recommended for use with individuals who are currently employed and for individuals who are not presently working, but are anticipating to return to a specific type of work.

### Aim of the study

The aim of the study is to test the rater reliability and to investigate the content validity of the Swedish version of The Work Environment Impact Scale.

### Material and methods

Rater reliability: Ten persons participated, four persons from a psychiatric clinic, five from a hand and plastic surgery ward and one person from a pain clinic. Four raters took part in this study. Two were occupational therapists with professional experience from work rehabilitation, and the authors of this study constituted the other two raters. To determine the correlation Spearman's rank correlation was used.

Content validity: Six occupational therapists with experience from work rehabilitation participated in this part of the study. The content validity was investigated through a survey, which was developed from the 17 variables in the WEIS.

The purpose of the survey was to decide if the questions in the WEIS were relevant in relation to the information that one has to collect concerning each variable.

### Results

Rater reliability: The comparison between the two practicing occupational therapists showed that 13 of 17 variables had an almost perfect correlation (0.81-1.00). The comparison between the two other raters showed that three of the 17 variables had an almost perfect correlation. The deviation on the four-point rating scale showed that the value four was most frequently used and that the four-point scale was differently used for the different variables.

Content validity: The questions concerning 10 of the 17 variables did not receive enough information. Questions concerning three variables were hard to understand, for seven variables the questions need linguistic improvement and for three variables the questions need to be subdivided into subquestions.

### Conclusions

The two occupational therapists which took part in the rater reliability test had a high correlation but a poor deviation in using the four-point rating scale. This deteriorated the interrater reliability. The questions in the WEIS did not give all the information needed. Further research and development of the WEIS is recommended to enhance the reliability and validity.

Key words: Assessment, content validity, interrater reliability, occupational therapy, work rehabilitation.

### References

1. Kielhofner G. A model of human occupation - theory and application. (2nd edition) Baltimore: Williams and Wilkins, 1995.

# The rehabilitation process for the geriatric stroke patient - goal and interventions

Author: **Wressle E**, Master of Science in Occupational Therapy, Linköping University.

Tutors: Öberg B, ass professor, Physiotherapy, Dept of Neuroscience and Locomotion, Linköping University.  
Marcusson J, professor, Division of Geriatrics, Dept of Neuroscience and Locomotion, Linköping University.

## Background

Stroke is one of the main causes of invalidity and death in Sweden. Every year about 35 000 individuals get stroke and 10 000 die due to stroke. Most of the stroke patients are older than 75 years. With respect to stroke survivors one important part of the treatment is rehabilitation. Geriatric stroke rehabilitation needs further evaluation.

## Aim of the study

The aim of this study was to describe the rehabilitation process at a geriatric ward. The two questions to be answered are firstly how the different treatment activities were chosen by the physiotherapist and the occupational therapist, and secondly how the treatment goals were expressed by the personnel and the patient.

## Material and methods

Twentytwo consecutive stroke patients admitted to geriatric ward and the personnel, treating these patients were participants. Two different methods of data collection were used, diaries and interviews. The data collection concerning treatment activities included diaries that followed the patients (n=22) for registration of treatment activities. The diaries were analyzed to describe how treatment activities were connected in time and at what level according to International Classification of Impairments, Disabilities and Handicaps (ICIDH, WHO, 1980) they could be described. The diaries were also analyzed to identify which decisions that were made in order to change the rehabilitation process. The second method concerning treatment goals included qualitative interviews with patients (n=8), physiotherapists (n=8), occupational therapists (n=8) and physicians (n=6). All interviews were taped and transcribed word by word. The analysis of the interviews included categorization of the goals. The goals were also analyzed according to ICIDH.

## Results

Treatment activities: Three different patterns were found, the first with clearly identified decision points, the second with a programme that was

decided early and not changed through the process, and the third pattern where the goal was changed due to change in medical status. The temporal distribution of registered treatment interventions were also analysed according to ICIDH, and showed activities at the disability level in the beginning of the treatment period, moving to handicap level at the end of the period. Furthermore there were other activities that do not fit in ICIDH, such as information to ward personnel and relatives, or conversations with the patient and reporting to colleagues in out-patient care or the community.

Treatment goals: The patient expressed thoughts about the consequences of stroke more than goals. The patient wished to become healthy again and talked about getting back to the status before stroke. The level of independence and worries about the future characterized the patient's view. The physiotherapist expressed goals concerning locomotion with optimal security. The occupational therapist set goals according to the patient's functional level in activities of daily living and motivation. Due to stroke there were consequences for the patient's role in the family which influenced the responsibilities taken. The doctors expressed themselves in more general terms about housing and social integration. Going back to the premorbid housing or finding a new supported housing, depending on the patient's needs, was essential. The physician respected the other professional's assessment when taking decision about discharge.

## Conclusions

The results make it clear that treatment goals are not always defined in co-operation with the patient. Instead the consequences of disease and the conditions for discharge to home were discussed. The main goal was often defined as the possibility to occupy the previous home once again. Most of the goals are at a handicap level according to ICIDH.

Key words: ICIDH, process reengineering, rehabilitation, stroke.

# The implication of working as a physiotherapist in the patients' home

Author: **Kihlstrand AK**, Master of Science in Physiotherapy, Linköping University.  
Tutor: Berterö C, lecturer, Dept of Nursing Science, Jönköping University College of Health Sciences.

## Background

It is increasingly common for a patient to be rehabilitated in his/her own home following the acute stage of the disease. This involves a new situation for the physiotherapist in charge.

## Aim of the study

The aim of this study was to generate a theory for the implication of working as a physiotherapist in home-based rehabilitation.

## Method

A qualitative method was used whereby seven physiotherapists working with home-based rehabilitation were interviewed. The analytical model applied was inspired by "Grounded Theory" (1, 2).

## Results

The analysis of the interviews provided a core-category: "Guest and Therapist". Home-based rehabilitation entails a necessary modification of the physiotherapist's role; he/she becomes a "guest" with a mission the rehabilitation of the patient.

A number of required key attributes were identified in the analysis: Sensitivity, Self-knowledge, Flexibility, Role-understanding, Comprehensive view, Know the Social Code. These key attributes were all found to be related and provided a basis for the identification of two categories: 1) Relationship-making, and 2) Shaping of common goals. Both of these were, in turn, related to the core-category "Guest and Therapist".

The results were confirmed by the interviewees as well as in studies by other investigators which analysed how the role of the physiotherapist may change with the outer framework.

The psycho-social situation turned out to be important particularly in the case of older patients who were rehabilitated at home. The principal aim for this patient group was to manage daily life and function in their normal environment. To form a strong relationship with the patient in order to achieve the common goal of rehabilitation was seen to be of vital importance as in all rehabilitation, although it seemed particularly important in home-based rehabilitation.

## Conclusions

The role of the physiotherapist changes with the working environment. The physiotherapist training will make students able to deal with this expanding area. It is possible that the methodology contained in the pedagogical model "Problem-based learning" which is founded on the key components, Problem-solving, Self-guided learning and Group-work, may give the physiotherapist students a basis for developing skills in this area.

Key words: Grounded Theory, home-based rehabilitation, physiotherapist.

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1. Glaser BG. Theoretical sensitivity. Advances in the methodology of grounded theory. Mill Valley, California: The Sociology Press, 1978.
2. Glaser BG. Basics of grounded theory analysis. Emergence vs forcing. Mill Valley, California: The Sociology Press, 1992.

# Five to seven years follow-up study after anterior cruciate ligament reconstruction

Authors: **Sundgren P, Svensson S**, Physiotherapy Programme, Linköping University.

Tutor: Areskog N-H, professor emeritus, Dept of Research and Development, Kalmar University College of Health Sciences.

## Background

Stroke is one of the main causes of invalidity and death in Sweden. Every year about 35 000 individuals get stroke and 10 000 die due to stroke. Most of the stroke patients are older than 75 years. With respect to stroke survivors one important part of the treatment is rehabilitation. Geriatric stroke rehabilitation needs further evaluation.

## Aim of the study

The aim of this study was to describe the rehabilitation process at a geriatric ward. The two questions to be answered are firstly how the different treatment activities were chosen by the physio-therapist and the occupational therapist, and secondly how the treatment goals were expressed by the personnel and the patient.

## Material and methods

Twentytwo consecutive stroke patients admitted to geriatric ward and the personnel, treating these patients were participants. Two different methods of data collection were used, diaries and interviews. The data collection concerning treatment activities included diaries that followed the patients (n=22) for registration of treatment activities. The diaries were analyzed to describe how treatment activities were connected in time and at what level according to International Classification of Impairments, Disabilities and Handicaps (1) they could be described. The diaries were also analyzed to identify which decisions that were made in order to change the rehabilitation process. The second method concerning treatment goals included qualitative interviews with patients (n=8), physiotherapists (n=8), occupational therapists (n=8) and physicians (n=6). All interviews were taped and transcribed word by word. The analysis of the interviews included categorization of the goals. The goals were also analyzed according to ICIDH.

## Results

Treatment activities: Three different patterns were found, the first with clearly identified decision points, the second with a programme that was decided early and not changed through the process, and the third pattern where the goal was changed due to change in medical status. The temporal

distribution of registered treatment interventions were also analysed according to ICIDH, and showed activities at the disability level in the beginning of the treatment period, moving to handicap level at the end of the period. Furthermore there were other activities that do not fit in ICIDH, such as information to ward personnel and relatives, or conversations with the patient and reporting to colleagues in out-patient care or the community.

Treatment goals: The patient expressed thoughts about the consequences of stroke more than goals. The patient wished to become healthy again and talked about getting back to the status before stroke. The level of independence and worries about the future characterized the patient's view. The physiotherapist expressed goals concerning locomotion with optimal security. The occupational therapist set goals according to the patient's functional level in activities of daily living and motivation. Due to stroke there were consequences for the patient's role in the family which influenced the responsibilities taken. The doctors expressed themselves in more general terms about housing and social integration. Going back to the premorbid housing or finding a new supported housing, depending on the patient's needs, was essential. The physician respected the other professional's assessment when taking decision about discharge.

## Conclusions

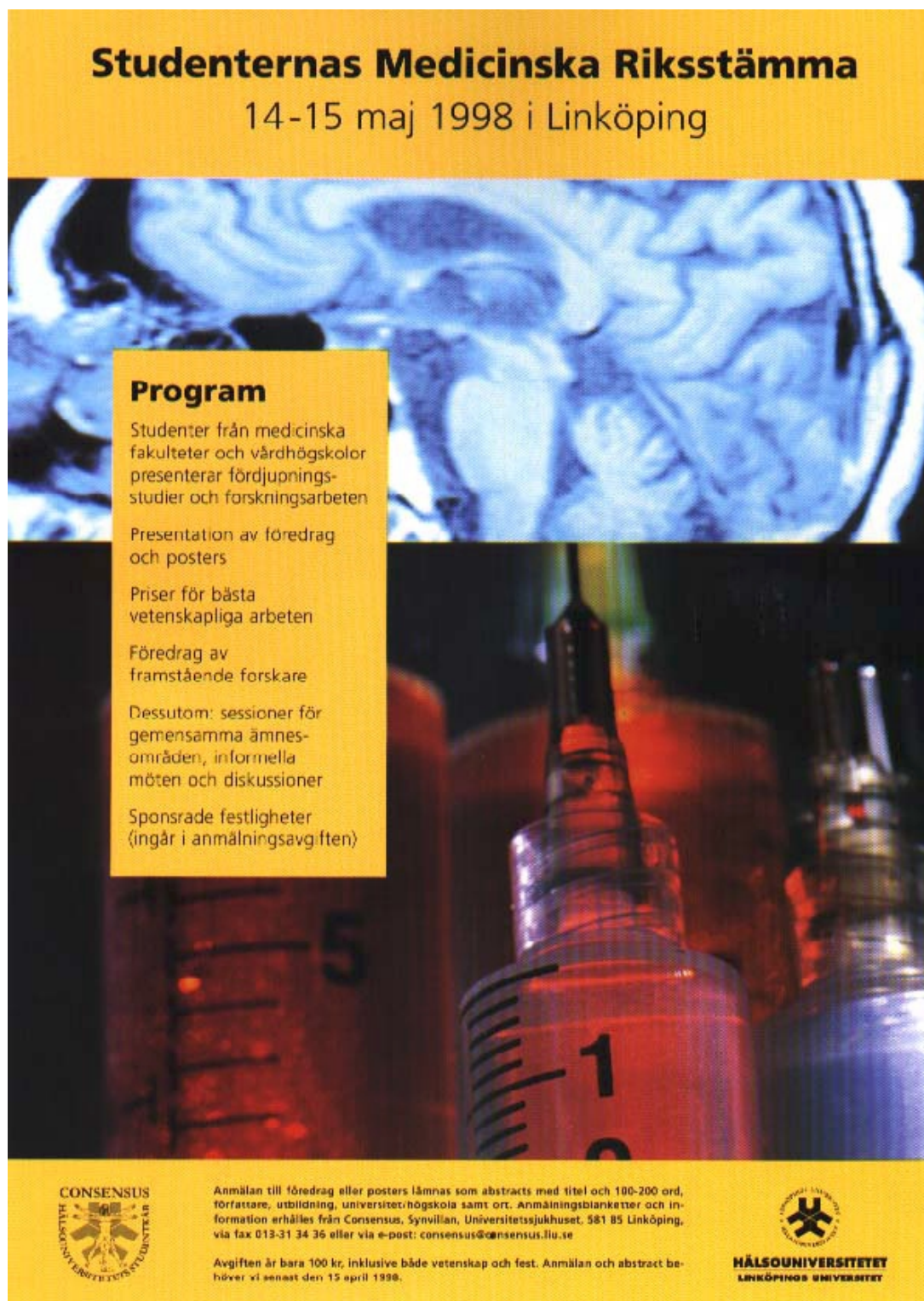
The results make it clear that treatment goals are not always defined in co-operation with the patient. Instead the consequences of disease and the conditions for discharge to home were discussed. The main goal was often defined as the possibility to occupy the previous home once again. Most of the goals are at a handicap level according to ICIDH.

Key words: ICIDH, process reengineering, rehabilitation, stroke.

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1. WHO. International Classification of Impairments, Disabilities and Handicaps. Geneva: WHO, 1980.

## - Science and students -



### Studenternas Medicinska Riksstämman

14-15 maj 1998 i Linköping

#### Program

Studenter från medicinska fakulteter och vårdhögskolor presenterar fördjupningsstudier och forskningsarbeten


Presentation av föredrag och posters

Priser för bästa vetenskapliga arbeten


Föredrag av framstående forskare

Dessutom: sessioner för gemensamma ämnesområden, informella möten och diskussioner

Sponsrade festligheter (ingår i anmälningsavgiften)

 Anmälan till föredrag eller posters lämnas som abstracts med titel och 100-200 ord, författare, utbildning, universitet/högskola samt ort. Anmälningsblanketter och information erhålles från Consensus, Synvillan, Universitetssjukhuset, 581 85 Linköping, via fax 013-31 34 36 eller via e-post: [consensus@consensus.liu.se](mailto:consensus@consensus.liu.se)

Avgiften är bara 100 kr, inklusive både vetenskap och fest. Anmälan och abstract behövs vi senast den 15 april 1998.

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