

HESAV-SCHOOL OF HEALTH SCIENCES

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# CHRONICITY: HEALTH PROMOTION, CARE INTERVENTIONS AND REHABILITATION

Multidisciplinary research, serving the health care field



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## Chronicity: health promotion, care interventions and rehabilitation

Current lifestyles noticeably increase the prevalence of chronic somatic illnesses.

Many aspects of our current lifestyles (stress, sedentariness, poorly balanced diets, sleep problems, smoking, etc.) contribute to the emergence of chronic illnesses. As leading causes of death worldwide, these pathologies have grave social and economic consequences. Yet the implications of chronic illness are greatest for sufferers themselves and for their primary network: aside from the complex nature of managing the illness itself, interpersonal relationships as well as professional, leisure and daily activities are often affected, increasing the incidence of mental health problems. Interventions aimed at reducing the prevalence and severity of chronic illness are thus central to health policies. Measures aimed at social and professional integration are also important components of the work of health professionals.

Research projects at HESAV aim to respond to the needs of patients as well as to those of informal caregivers and of the professionals involved. To this end, a global approach to chronicity is required, including biological, relational, psychological and social aspects. Current projects look at chronic pain and means of alleviating it; at the patient's management of their illness; at patients' adherence to treatment and at their ability to achieve self-care (notably in the context of several projects on diabetes); at rehabilitation and social integration measures; at the adequacy of care interventions; at the roles and needs of informal caregivers; and at relationships with professionals. Interdisciplinary approaches and research designs make it possible to integrate the complementary perspectives that are crucial for a global understanding of issues related to chronicity. For example, neurosciences, clinical sciences and social sciences may all examine the experience of pain in patients with spinal cord injuries, while clinical instruments are simultaneously developed with the aim of quantifying neurological dysfunctions following a spinal cord injury.

## Current research

Factors influencing self-management in adults with diabetes: an umbrella systematic review protocol.

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With support from  
Commission scientifique du  
domaine santé HES-SO.

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### Background

Diabetes self-management (DSM) is influenced by a wide range of factors acting simultaneously and interfering with its actual application by patients. A variety of reviews regarding these factors does exist, however a more comprehensive scrutiny of the phenomenon is still lacking.

### Aim

To identify and describe factors influencing DSM in adults with diabetes by summarizing available evidence concerning their type, classification, and relative importance.

### Methods

A systematic examination of literature by applying JBI umbrella review strategies, for comparing the results of published systematic reviews. We will perform an extensive search in 11 bibliographic databases, and in reference lists of relevant articles up to January 2018. We will include systematic reviews covering adults DSM-related factors and their relationships. We will consider both qualitative and quantitative components of available literature from any setting and geographic location. Two reviewers will independently assess each study relevance and quality, and extract data from included reviews. Quantitative and qualitative findings will be summarized separately, and labeled according to their type (barrier/facilitator) or direction of association (+/-), classification (e.g., demographic, social etc.), and frequency of occurrence or strength of association. A final discussion will provide a critical comparison of results.

### Relevance of the study

Taking a more comprehensive look at factors influencing DSM will contribute to our understanding of the patients' specificities, needs in the process of DSM, and will assist in targeting interventions to support DSM in adults with diabetes.

## Spinal kinematics and pain-related fear in chronic low back pain: a cohort study.

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Chronic low back pain (CLBP) is one of the most frequent causes for limitations in daily, leisure and work-related activities. Alterations in spinal kinematics have consistently been reported in patients with CLBP, suggesting that this factor could contribute to the chronicity of pain and disability. Psychological factors, such as pain-related fear, have been described as a possible main cause of kinematic alterations in CLBP. While it is known that pain-related fear can drastically decrease during a rehabilitation program, it is not known to which degree it influences spinal kinematics.

Therefore, this study will test patients with CLBP before and after a 3-weeks multimodal rehabilitation program to investigate if a decrease in pain-related fear is associated with spinal kinematics improvements.

This study will advance our understanding of the relationships between psychological and physical factors in CLBP physiopathology. Ultimately, a better comprehension of the underlying mechanisms involved in CLBP rehabilitation will help enhance care for patients suffering from back pain.

The relation between psychological factors and spinal motor behaviour in low back pain: a systematic review and meta-analysis.

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With support from  
Commission scientifique du  
domaine santé HES-SO.

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Low back pain (LBP) is one of the most frequent causes for limitations in daily, leisure and work-related activities.

Alterations in spinal motor behaviour, such as limited amplitude of movement and elevated trunk muscle activity, have consistently been reported in individuals with LBP. This suggests that people with LBP move in a more rigid manner. Models used in rehabilitation argue that psychological factors influence spinal motor behaviour in patients with LBP.

However, inconsistent data exist in the literature, making the link between these psychological and biomechanical factors unclear. In order to improve rehabilitation strategies, and offer effective options to modify spinal movement, it is essential to better understand how these factors influence each other's.

Therefore, the aim of this systematic review is to determine if psychological factors predict spinal motor behaviour alterations in patients with LBP.

Non-invasive reinforcement of the upper airway dilator muscles as an alternative approach to treat patients with obstructive sleep apnea.

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Continuous positive airway pressure (CPAP) is an effective therapy and the first-line treatment option offered to patients with OSA. However, between 20-60% of patients with severe OSAS do not comply with CPAP and remain untreated. Alternative treatment options have therefore been investigated such as positional therapy, mandibular advancement devices and sometimes surgical treatments, but demonstrated little benefit in moderate-to-severe OSAS. In this context, reinforcement of the upper airway dilator muscles appear to be a promising therapeutic strategy.

The main objective of this study is to assess the effectiveness of a simple and quick myofunctional reeducation protocol of the tongue in reducing the OSAS severity.

Activity patterns revisited: towards a qualitative approach of the relationship to activity in chronic pain sufferers after orthopaedic trauma.

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With support from SUVA,  
fond de la recherche  
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Numerous biomedical and clinical studies have explored the behaviours toward activity of individuals suffering from chronic pain. Through the use of questionnaires, three major patterns of activity have been identified, i.e: avoidance, pacing and persistence. Several studies have been conducted to analyse these patterns, their interrelations as well as their associations with psychosocial factors.

However, personal strategies adopted by individuals to manage activity remain relatively unknown. This study intends to investigate the relationship that people have with activity following an orthopaedic trauma, and to bring to light the individual practices and strategies used for activity management. The goal is to understand the structured process that lead sufferers to one or another activity patterns, and to find out whether these mechanisms are stable over time or whether they evolve in the long run, particularly after participation in a rehabilitation program. A better understanding of the factors that underlie activity management will enable professionals to adapt rehabilitation approaches and will increase the effectiveness of interventions.

The planned study combines several approaches that contribute to its novel character. First, it is qualitative. Through a patient-centred approach, it's based on observations of professional workshops and on interviews with persons participating in the rehabilitation program at the Clinique Romande de Réadaptation (CRR) at Sion. Secondly, it is interdisciplinary, combining skills of researchers from human and social sciences, physiotherapy, physical medicine, to favour the emergence of pertinent conclusions from a theoretical as well as a practical point of view. Finally, it is a longitudinal study that will explore the maintenance of activity management practices one year after the participation to the rehabilitation program.

## Spinal kinematics and chronic low back pain.

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Although chronic low back pain (CLBP) is a common medical condition, with major societal repercussions, its pathomechanism is still poorly understood. The contemporary understanding of CLBP suggests a multidimensional nature of the condition, particularly an interrelation between psychological and physical factors. This doctoral project aims at better understanding some underlying mechanisms in this complex condition, focussing on one possible cause of persistence of symptoms and disability in CLBP, spinal kinematics alterations (spinal movements). Furthermore, it aims at examining the relationship between spinal kinematics and psychological factors, such as kinesiophobia.

### **General objectives:**

1. To improve our understanding of spinal kinematics alterations in CLBP patients.
2. To analyse the association between spinal kinematics and pain or disability.
3. To analyse the association between psychological variables and spinal kinematics.
4. To develop strategies to improve spinal kinematics in CLBP patients.

### **Methods**

Pain-free subjects and patients with chronic low back pain will come to a movement analysis laboratory several times (for some, before and after a multidisciplinary rehabilitation program). Sensors will be installed on the back of the participants and their spinal kinematics will be measured during various movements and activities of daily life (walking, getting up from a chair, ...).

Development of a complex nursing intervention for supporting brain injured patients and their families.

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Acquired brain injury is the leading cause of disability in adults worldwide. The effects on motor and cognitive faculties are very important and cause changes in life for patient and his family. In addition to their own suffering, families must cope with situations they are not prepared to and often in a very short time. Family dynamics is disturbed by adjustments to the roles and responsibilities. Family becomes an important resource for the patient to manage his daily and for hospital staff during hospitalization. In order to guarantee a good collaboration with families, hospital staff must be sensitive to their needs. This can reduce the risk of a deterioration in their mental health or physical health. Currently, the role of relatives within the health system is not defined and consideration of their needs is not systematic.

However, families are facing new challenges and new needs facing these crisis situations. They need information, emotional support, education, support to adjust psychological and social aspects and even administrative support.

Developing a complex nursing intervention containing all these aspects could be helpful to achieve this issues.

## Completed research

### Olivier Contal

In collaboration with  
Jean-Paul Janssens (HUG)  
Jean-Louis Pépin (CHU Grenoble)  
Jean-Christian Borel (CHU Grenoble)

### **Stéphanie Vaudan (HESAV)**

End 2018

Changes in Daily Use of Ventilatory Assistance Before and After Respiratory Exacerbation in Neuromuscular Patients (Exa-VNI-NM).

### Kétia Alexandre

In collaboration with  
Isabelle Peytremann-Bridevaux  
(Field Partner, IUMSP)  
Olivier Desrichard (Field Partner, UNIGE)  
End 2017

Understanding the Role of Socio-Cognitive Factors on Diabetes Self-Management Behaviors in Adult Patients living with Diabetes.

### Emmanuelle Opsommer

In collaboration with  
Gunther Landmann  
(Center for Pain Medicine, Swiss, Paraplegic Centre, Nottwil)  
Léon Plaghki  
(Université catholique de Louvain, Belgium)  
Armin Curt (University of Zurich)  
End 2017

Laser evoked potentials (LEPs) and quantitative sensory testing (QST) and their contribution to sensory assessment of patients with and without pain after spinal cord injury: A feasibility study.

### Claude Pichonnaz

In collaboration with  
**Rose-Anna Foley (HESAV)**  
**Hervé Jaccard (HESAV)**  
**Josiane Mbarga (HESAV)**  
End 2016

Non-specific chronic low back pain patients' expectations toward physiotherapy and physiotherapists: An interpretive socio-anthropological study on ill persons' experience. The patient's pain experience in spinal cord injury: a qualitative approach.

### Emmanuelle Opsommer

In collaboration with  
**Isabelle Probst (HESAV)**  
**Sara Mahnig (HESAV)**  
Virginie Wicky-Roten  
(Clinique romande de réadaptation, Sion)  
End 2015

The patient's pain experience in spinal cord injury: a qualitative approach.

### Emmanuelle Opsommer

In collaboration with  
**Isabelle A. Knutti (HESAV)**  
Marc R. Suter (CHUV, UNIL)  
End 2014

Test-retest reliability of thermal quantitative sensory testing on two sites within the L5 dermatome of the lumbar spine and lower extremity.

## Completed PhD research

Nancy Helou

Director of thesis  
Dr. Maya Shaha  
Faculty of Biology and Medicine (IUFERS),  
University of Lausanne

Co-Director  
Dr. Anne Zanchi  
Responsable de la consultation de la  
Néphropathie Diabétique, CHUV

End 2016

The impact of a multidisciplinary self-care management program on quality of life, self-care behavior, adherence to the anti-hypertensive treatment, glycemic control, and renal function in elderly living with diabetic kidney disease.





All research can be found on the  
website of HESAV

<http://recherche.hesav.ch>



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