

WHO Collaborating Center for Frailty, Clinical Research and Geriatric Training Newsletter

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Toulouse, December 16, 2019

EDITORIAL

We are pleased to inform you that the WHO Collaborating Center for Frailty (WHO CC) has created three communication tools in order to better exchange with all those concerned by the health of older people around the world: academic specialists, clinicians, geriatric networks, research partners, etc.



our Twitter account: <https://twitter.com/WHOCenterFrailt>. Created in November 2018, we are happy to report that 260 tweets were addressed to our new community of 1145 followers.



*our website: <http://www.chu-toulouse.fr/-centre-collaborateur-oms-sur-la-fragilite-la->
You can visit it at any time.*



our Newsletter: This paper document is addressed to our database of worldwide professionals specialized in frailty and sarcopenia issues. For further distribution to your networks, please feel free to contact us.

You can upload it at <https://www.chu-toulouse.fr/-centre-collaborateur-oms-sur-la-fragilite-la->

We hope that you will support our activities and initiatives in designing future healthcare to meet the needs of older people and in disseminating our news, either : by joining us on Twitter, by following us on our website or by reading our Newsletter. In the meantime, we send you our season's greetings and best wishes for a successful New Year.



ACTIONS

WHO's Clinical Consortium on Healthy Ageing (CCHA)

Introduction The WHO CCHA is a group of global experts that advances research and clinical practice by facilitating data sharing and analyses, supporting evaluation of clinical practice and building capacity of health professionals and clinicians on Healthy Ageing. Starting 2017, they discussed the development of a comprehensive assessment of an older person's health and social care needs within the "Integrated Care for Older People (ICOPE)" approach. The comprehensive assessment would form the backbone of a WHO framework for addressing the health and long-term care needs of older people, with a focus on intrinsic capacity and functional ability. Over the last year a certain amount of actions was undergone to go forward in the implementation of integrated care worldwide.

Website: <https://www.who.int/ageing/health-systems/clinical-consortium/meeting-2017/en/>

WHO CCHA annual meetings As WHO Collaborating Center for Frailty, the G erontop le of Toulouse provides administrative support for the organization of these regular events. The 4th (11 & 12 December 2018) and 5th (21 & 22 November 2019) editions both took place in Geneva, Switzerland and were hosted by WHO's Aging and Life Course Department (ALC). A multidisciplinary network of 60 international experts from academic and non-governmental backgrounds got together and important discussions were reported on:

- reviewing of the new the WHO ICOPE Guidance for systems and services and Guidance on person-centered assessment and pathways in primary care, to assist health and social care providers translate evidence from the ICOPE guidelines into practice
- the best way to go forward on the implementation of the ICOPE care pathways into clinical practice will be an exciting challenge to improve the lives of older people around the world
- the development of ICOPE digital tools (ICOPE app and digital database platform) to increase the capacity of countries to deliver health and social services at primary health care level for ageing populations
- lessons learnt from the ICOPE pilots case studies.



The December 2018 meeting

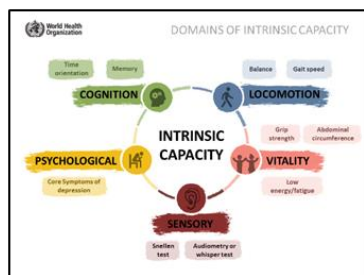


The November 2019 meeting

The ICOPE Program

WHO's Integrated Care for Older People (ICOPE) program This novel initiative reflects a community-based approach that will help to reorient health and social services towards a more person-centered and coordinated model of care that supports optimizing functional ability for older people.

Objectives: Manage declines in the Intrinsic Capacity of older people to 1) improve mobility impairment 2) maintain visual and hearing capacity 3) prevent cognitive impairment 4) prevent depressive symptoms 5) prevent malnutrition.



Health and social care providers in the community and primary care settings are the targeted audience. The aim is to provide guidance for healthcare workers on how to manage priority health conditions associated with declines in intrinsic capacity and to address the health and social care needs of older people comprehensively aiming at preventing care dependency of older adults.

Website: <https://www.who.int/ageing/health-systems/icope/en/>

WHO CCHA Workstream on ICOPE Pilots & Implementation The WHO Collaborating Center took the opportunity of the ICFSR2019 conference to organize the WHO CCHA Workstream on ICOPE Pilots & Implementation meeting on 21st February 2019 in Miami, USA. Our center co-organized this appointment to identify pilot countries and to assign the corresponding principal investigators for ICOPE pilots.

The Principal Investigators will adopt and finalize the research protocols and train their local health workers (via a training workshop) to use the ICOPE screening tool. To date nominated countries are: China, Mexico, Spain, France, Japan, Thailand, Italy, South Africa, India. Six other Latin American countries could join the group soon and their representatives will raise awareness on the developments of the WHO ICOPE program in their region.

Project managers are: Prof Leocadio RODRIGUEZ MANAS (Spain), Prof Luis Miguel GUTIERREZ ROBLEDO (Mexico) and Prof Ian PHILP (UK). With the group members, they will work on the resource mobilization in conjunction with WHO and IAGG GARN (IAGG's Global Aging Research Network).

The ICOPE App WHO develops a series of digital tools to support the uptake and implementation of the ICOPE Handbook. The ICOPE Digital Platform will comprise mobile applications that will guide health and social care workers on the screening, assessing and creation of person-centered care plans. It also involves the development of a dashboard to support the monitoring and follow up of older people.

The WHO Collaborating Center for Frailty is a partner of the WHO ALC to develop this new digital tool designed by Universal Doctor (Barcelona, Spain). Our collaboration consists in validating the scientific data and medical process based on WHO's ICOPE program.

See the related links:

- Video on the launch of ICOPE digital app to improve care for older people:

<https://www.youtube.com/watch?v=Arc2whZGpH0>

- WHO ICOPE Handbook digital app:

<https://play.google.com/store/apps/details?id=com.universaltools.icope>



The ICOPE library A tool kit was launched on 1st October 2019, during the celebration of the International Day for Older People (IDOP) in Geneva. As WHO Collaborating Center for Frailty, Clinical Research and Geriatric Training, we are happy to contribute to the dissemination of ICOPE tools, that can help establish the program in your country, in your health facilities, in your community, and in your research activities. Please help us spread the material below:

- Video on Integrated Care for Older People: https://www.youtube.com/watch?v=Wp_SaMtMSZM

- WHO ICOPE Website: <https://www.who.int/ageing/health-systems/icope/en/>

- WHO ICOPE Implementation framework: <https://www.who.int/ageing/publications/icope-framework/en/>

- WHO ICOPE Framework infographics: <https://www.who.int/ageing/health-systems/icope/icope-infographic2-full.pdf?ua=1>

- WHO ICOPE Guidelines:

<https://apps.who.int/iris/bitstream/handle/10665/258981/9789241550109-eng.pdf;jsessionid=E46F089974E4F6DA1FC4CFE8A2C89166?sequence=1>

- WHO ICOPE Brochure <http://www.who.int/ageing/publications/guidelines-icope/en/>

- WHO ICOPE Handbook: <https://www.who.int/ageing/publications/icope-handbook/en/>

- WHO ICOPE Handbook infographics: <https://www.who.int/ageing/health-systems/icope/icope-infographic-full.pdf?ua=1>

- WHO ICOPE Evidence Resource Center. Includes the evidence profiles on mobility, malnutrition, visual impairment, hearing loss, cognitive impairment, depressive symptoms, urinary incontinence, risk of falls, and caregiver support (recommendations used to develop the ICOPE guidelines):

<http://www.who.int/ageing/health-systems/icope/evidence-centre/en/>

- Video on the launch of ICOPE digital app to improve care for older people:

<https://www.youtube.com/watch?v=Arc2whZGpH0>

- WHO ICOPE Handbook digital app:

<https://play.google.com/store/apps/details?id=com.universaltools.icope>

The INSPIRE project



Launch ceremony Mrs. Carole DELGA, President of the Occitanie Region, launched the INStitute for the Prevention of dependency, healthy aging and REjuvenative medicine (INSPIRE) on 4th December 2018. On this occasion a 1st scientific meeting took place at the Hôtel de Région of Toulouse under the auspices of the WHO Collaborating Center for Frailty.

An audience of 160 participants was reported, and guests came from many fields of aging: research, health and social care, industry and other economic domains. The INSPIRE project is a milestone for the prevention of dependency and its goals are to discover, design, validate, and implement innovative regenerative strategies for delaying the age-related functional decline (in particular, mobility impairment). It also targets to translate innovative procedures, tools and products developed into a completely new care model for ageing populations. Led by Professor Bruno VELLAS and Professor Louis CASTEILLA, the scientific project offers a new model of aging based on the latest scientific research and innovative care, aiming to increase life expectancy without disability.

A press conference was held prior to the meeting with the participation of the President of the Occitanie Region and representatives of the WHO ALC Department, of the Toulouse Gérontopôle, of the Stromalab (a mixed Inserm, CNRS, Toulouse University research unit).



Website: https://www.chu-toulouse.fr/IMG/pdf/20190722_cp_chu_toulouse_inspire_english_version.pdf

Twitter: <https://twitter.com/INSPIREplatfor1>

The next INSPIRE scientific meeting will take place on 14th January 2020 in Toulouse and will present INSPIRE's Care cohort in view of implementing WHO's ICOPE program in the Occitanie region, to promote Healthy Aging throughout southern France. In addition to the Care cohorts, other study groups will be presented: biomarkers, human, animal, e-health. Partners such as the INSERM unit UMR 1027, the I2MC (Institut des Maladies Métaboliques et Cardiovasculaires), the CRCA (Centre de Recherche sur la Cognition Animale) and the IRSD (Institut de Recherche en Santé Digestive), and the CPTP (Centre de Physiopathologie Toulouse Purpan) will also discuss their hypothesis and present their current research on Gerosciences. It will be a good opportunity to spread updated information on the INSPIRE program, and celebrate the first year of work with all team leaders and members

The European APTITUDE project

Presentation The project aims to spread in the cross-border area of the Pyrénées, a program to prevent dependency among seniors, including care promotion, training, research and innovation in gerontology. A network of experts in ten territories and more than twenty hospitals (France-Spain-Andorra) will be working on the implementation of tools for measuring the Intrinsic Capacity of WHO and test the feasibility of this approach.



After Toulouse and the Principality of Andorra, the 3rd workshop was organized in July 2019 in Pamplona, Spain. In addition to working on local initiatives to develop medical care and follow up of frail older people, members of the cross-frontier network studied the implementation into clinical practice of WHO's Intrinsic Capacity assessment tools.

Aptitude publication

How to Manage Frail Older Adults in the Community? Proposal of a Health Promotion Program Experienced in a City of 16,638 Inhabitants in France. de Kerimel J, Tavassoli N, Lafont C, Soto M, Pedra M, Nourhashemi F, Lagourdette C, Bouchon L, Chaléon A, Sourdet S, Rolland Y, Cesari M, Vellas B. J Frailty Aging. 2018;7(2):120-126. doi: 10.14283/jfa.2017.47.

Website: <https://www.apptitude-net.com/>

Twitter: <https://twitter.com/apptitudenetwork>

Next Aptitude workshop is scheduled on 7th May 2020 in Barcelona, Spain. This 4th meeting will provide an update of the project, and of the ICOPE program. The ICOPE Mobile Apps and Chatbot will also be presented and roundtables will debate on the various domains of the ICOPE program

International Conferences on Frailty & Sarcopenia Research (ICFSR)

ICFSR2019 Conference was organized on 20-22 February 2019 in Miami, USA and brought together researchers from academy, agencies and industry to raise further awareness on new findings on Frailty and Sarcopenia, from research to clinical practice.



Dr Islene ARAUJO DE CARVALHO from WHO, participated in the ICFSR Sarcopenia Taskforce on 19th February to debate on "Clinically meaningful change for physical performances and regulatory issues: biomarkers for sarcopenia and frailty". In addition, Dr ARAUJO presented and conducted a panel discussion on WHO's ICOPE (Integrated Care for Older People) program. With a total of 500 delegates the event is the largest scientific gathering in the field. Congratulations for the success of the ICFSR2019.

Conference outcomes

In the meantime, you can

- read *Highlights from the 2019 International Congress on Frailty and Sarcopenia Research*. Maltais M, Aubertin-Leheudre M, Dray C, Fielding RA, Rolland Y, Cesari M, Vellas B. J Frailty Aging. 2019;8(3):117-119. doi: 10.14283/jfa.2019.13.
- download the Journal of Frailty and Aging Volume 8, Supplement 1, 2019 that includes all the ICFSR oral communications and posters
- provide your e-mail address in order to see the conference videos at <https://frailty-sarcopenia.com/videos.php>

ICFSR2019 Taskforce on Sarcopenia The Taskforce group met on February 19th, 2019 prior to the ICFSR2019 conference in Miami. It brought together 40 international experts: academics, researchers and industry. They were invited to debate on the best ways to manage sarcopenia in older adults and to provide recommendations for healthcare specialists. The next meeting will take place in Toulouse, France.

Taskforce outcomes

International Clinical Practice Guidelines for Sarcopenia (ICFSR): Screening, Diagnosis and Management. Dent E, Morley JE, Cruz-Jentoft AJ, Arai H, Kritchevsky SB, Guralnik J, Bauer JM, Pahor M, Clark BC, Cesari M, Ruiz J, Sieber CC, Aubertin-Leheudre M, Waters DL, Visvanathan R, Landi F, Villareal DT, Fielding R, Won CW, Theou O, Martin FC, Dong B, Woo J, Flicker L, Ferrucci L, Merchant RA, Cao L, Cederholm T, Ribeiro SML, Rodríguez-Mañas L, Anker SD, Lundy J, Gutiérrez Robledo LM, Bautmans I, Aprahamian I, Schols JMGA, Izquierdo M, Vellas B. *J Nutr Health Aging.* 2018;22(10):1148-1161. doi: 10.1007/s12603-018-1139-9.

ICFSR2019 Survey for the "ICFSR2019 Clinical Guidelines for Frailty". Members of the ICFSR2019 Taskforce on Sarcopenia participated in an online survey designed by John MORLEY (St Louis, USA) and Elsa DENT (Adelaide, Australia) aiming to obtain the point of view of the 40 international experts. The survey included 10 questions with a multiple choice answer response. 1. – strong recommendation, indicated that the benefits of the intervention undoubtedly outweighs any risks, 2. – conditional recommendation, indicated that clinicians would only refer the intervention under specific conditions because there is a fine balance between risks and burdens. Whilst many health practitioners would recommend the intervention, others would not; burdens include unwanted side effects and increased risk of adverse outcomes which undermine the health benefits of the intervention. A conditional recommendation is also given when patient values were unknown regarding the intervention, or if there is substantial variation in patient preferences/values, 3 - insufficient evidence (no recommendation) indicated that there is insufficient evidence to determine net benefits or risk.

Survey outcomes

Physical Frailty: ICFSR International Clinical Practice Guidelines for Identification and Management. Dent E, Morley JE, Cruz-Jentoft AJ, Woodhouse L, Rodríguez-Mañas L, Fried LP, Woo J, Aprahamian I, Sanford A, Lundy J, Landi F, Beilby J, Martin FC, Bauer JM, Ferrucci L, Merchant RA, Dong B, Arai H, Hoogendijk EO, Won CW, Abbatecola A, Cederholm T, Strandberg T, Gutiérrez Robledo LM, Flicker L, Bhasin S, Aubertin-Leheudre M, Bischoff-Ferrari HA, Guralnik JM, Muscedere J, Pahor M, Ruiz J, Negm AM, Reginster JY, Waters DL, Vellas B. *J Nutr Health Aging.* 2019;23(9):771-787. doi: 10.1007/s12603-019-1273-z.

Next ICFSR2020 conference

This high-level scientific conference dedicated to Frailty and Sarcopenia issues will be hosted in Toulouse, France on 11-13 March 2020. Nearly 300 abstracts were submitted to date but *A late call for abstracts will take place from January 7 to 21, 2020.* All abstracts and proceedings will be published in the *Journal of Frailty and Aging (JFA)*, indexed in PubMed/Medline (<http://www.jfrailtyaging.com/>)



Consult the conference website and see the:

ICOPE presentation: https://frailty-sarcopenia.com/lect_video.php?video=PANEL---ICOPE---ARAUJO

Call for late breaking news: <https://frailty-sarcopenia.com/abstract.php>

Preliminary program: <https://frailty-sarcopenia.com/program.php>

Webinars: <https://frailty-sarcopenia.com/webinar.php>

Online registration: <https://frailty-sarcopenia.com/registration.php>

Frailty Asia-China Conferences

The WHO Collaborating Centre for Frailty, Clinical Research and Geriatric Training, Toulouse (France), co-organized the 2nd International China Conference on Frailty on 12th & 13th October 2019, in Beijing, China, with the China Association of Gerontology and Geriatrics (CAGG), National Science Foundation of China (NSFC) and the Research Center for (NCRCGD). The meeting frailty to develop function with aging and



National Clinical Geriatric Disorders to address the issue of programs to maintain to avoid dependency.

Three keynote lectures and two symposiums were arranged to debate on the WHO program on Integrated Care for Older People (ICOPE) to maintain functions and prevent dependency in seniors. Representatives from WHO Geneva, from France, Switzerland, Hong Kong, Spain, Japan and China talked about its implementation in their region. Furthermore, a roundtable gave the description of the ICOPE program step 1 & 2 and on "How to assess the five intrinsic capacities: mobility, cognition, sensory (hearing/vision) psychological and vitality".

Website : <http://www.frailty-china.com/>

French-speaking Frailty Conferences

Fragilité 2019 conference The event took place on 4th & 5th April 2019 in Paris, France and aimed to discuss the last findings on frailty, healthy ageing and prevention of dependency of old adults. As WHO Collaborating Center for Frailty, the Toulouse Gérontopôle presented WHO's approach of Integrated Care for Older People (ICOPE). Dr Islene ARAUJO DE CARVALHO accepted to make a talk on "Outcomes of WHO's program on Aging in 2019" and Dr Arti PRASAD, MD, FACP, Professor of Medicine at the University of Minnesota, USA addressed a lecture on "Integrative Care for Healthy Aging". A symposium was also organized on "The WHO ICOPE program: integrated care for old people based on maintaining functions: mobility, cognition, psychological, vitality, sensory".



Next Fragilité 2020 conference will be organized on 8th & 9th March, 2020 in Toulouse, France. You can register online at: <https://fragilite.org/program.php>

Rencontres Vieillessement 2020 in Toulouse

Every year the "Rencontres Vieillessement" meeting takes place at the Toulouse University Hospital headquarters. Always organized during the last quarter of the year, this 21st edition was held on 16th October 2019. It addresses the latest findings in geriatric medicine and gathers physicians, chemists, careworkers, physical therapists, nursing home directors, head of medical departments, researchers, industry and students. The event provides an opportunity for continuous education for health professionals and aims to promote new clinical guidelines and facilitate the implementation of novel clinical practices in hospital, nursing home and community settings in order to better cover the needs of older people.

Dr Yuka SUMI (WHO) made a keynote lecture on "ICOPE APPS: Guidance on person-centered assessment and pathways in primary care" and three workshops were organized to promote WHO's Integrated Care Program: "ICOPE in oncogeriatric patients" by L. Balardy (Toulouse), "ICOPE in Alzheimer patients: what's new for the care of nursing home residents with AD" by A. de Mauléon, M-E. Soto, Y. Rolland (Toulouse), and "ICOPE in frail patients" by S. Sourdret (Toulouse).

Website: <https://rencontres-vieillessement.com/program.php>



JOB OPPORTUNITIES

At the Institute on Aging of the Toulouse GÉrontopôle

Since 2009, the research Institute, has recorded over 120 visits of researchers and invited professors from all over the world, who work on many topics related to the aging process. Today research is particularly realized within the framework of the WHO Collaborating Center for Frailty and the INSPIRE project. To this effect, additional scientists have been hired and the team now counts a total of 19 persons from Brazil, China, France, Italy, Mexico, Spain, Mexico, Taiwan, Lebanon. Examples of their research include: nutrition, depression, medication, health economics, biomarkers of aging, intrinsic capacity, epidemiology, ICOPE integrated care implementation, long-term care, palliative care, nephrology, markers of mobility, frailty, sarcopenia, predictors of intrinsic capacity trajectories, neuroimaging, E-health, adapted physical activity, cognitive function. Other collaborators will be invited to work at the Institute, so if you are interested see below and spread the word to other colleagues.

2nd call for candidates

The GÉrontopôle of the Toulouse University Hospital (Toulouse, France) is an internationally-recognized institution for clinical research, particularly Alzheimer's disease, nursing home research, and sarcopenia and frailty (coordinating international scientific task forces on the topics).

As WHO Collaborating Center for Frailty, the GÉrontopôle is recruiting PhD students and post-docs to be involved in the INSPIRE Project, an observational prospective project (starting date 2019), that aims to investigate the biomarkers of aging and functional trajectories from early to late ages (from 50yrs and over).

Candidates will work on data collected from associated studies such as the MAPT (Multi-Domain Alzheimer's Preventive Trial), SPRINTT (Sarcopenia and Physical Frailty in older people: multi-component Treatment strategies - <http://www.mysprintt.eu/en>), DO HEALTH (VitaminD3 - Omega3 - Home Exercise - HeALTHy Ageing and Longevity Trial - <http://do-health.eu/wordpress/>) and on other databases, when available. The INSPIRE program will also include a Gerosciences program on aging biomarkers, as well as an ICOPE (Integrated Care of Older People) research cohort.

In particular, candidates will be in charge of analyzing data, writing and publishing scientific articles in peer-reviewed journals. Post-docs with PhD in a relevant discipline (e.g., epidemiology, clinical geriatrics, biology of aging/aging biomarkers) is preferable (but not mandatory). Fluency in english writing and expertise in statistical softwares (e.g., SAS, Stata, R) are required. Various positions according to the candidate's experience are available. Posts are for full-time and fixed-term (period of one year, renewable every year up to three years) appointments and are expected to start as from October 2019 and onwards.

Applications should include the following documents in english:

- a brief cover letter explaining why you would like to join the GÉrontopôle,
- a short curriculum vitae including your publications list,
- pdf files of one or two full-text articles of yours.

Applicants should send all these documents by e-mail to Constance de Seynes (constance.de-seynes@univ-tlse3.fr). Please use as object of your e-mail "Application for an INSPIRE post-doc position at the GÉrontopôle". Shortlisted applicants will be contacted for a phone interview and a subsequent in-person interview in Toulouse.

SCIENTIFIC READING



The Journal of Frailty & Aging (JFA)

The JFA is a peer-reviewed international journal listed in Medline and Pubmed. It presents articles that are related to research in the area of aging and age-related (sub) clinical conditions. In particular, the journal publishes high-quality papers describing and discussing social, biological, and clinical features underlying the onset and development of frailty in older persons.

Website: <http://www.jfrailtyaging.com/about-the-journal.html>

Issue n°04-2019 is now published and includes the following papers:

- RELATIONSHIP OF PHYSICAL FRAILTY TO PHOSPHOCREATINE RECOVERY IN MUSCLE AFTER MILD EXERCISE STRESS IN THE OLDEST-OLD WOMEN. R. Varadhan, D.W. Russ, R.E. Gabr, J. Huang, R.R. Kalyani, Q.-L. Xue, A.R. Cappola, K. Bandeen-Roche, L.P. Fried. *J Frailty Aging* 2019;8(4)162-168
- FRAILTY AND THE METABOLIC SYNDROME – RESULTS OF THE BERLIN AGING STUDY II (BASE-II). N. Buchmann, D. Spira, M. König, I. Demuth, E. Steinhagen-Thiessen. *J Frailty Aging* 2019;8(4)169-175
- DISCORDANCE ABOUT FRAILTY DIAGNOSIS BETWEEN SURROGATES AND PHYSICIANS AND ITS RELATIONSHIP TO HOSPITAL MORTALITY IN CRITICALLY ILL OLDER ADULTS. A.A. Hope, M. Ng Gong. *J Frailty Aging* 2019;8(4)176-179
- CAN THE COMBINED USE OF TWO SCREENING INSTRUMENTS IMPROVE THE PREDICTIVE POWER OF DEPENDENCY IN (INSTRUMENTAL) ACTIVITIES OF DAILY LIVING, MORTALITY AND HOSPITALIZATION IN OLD AGE? L.P.M. Op het Veld, E. van Rossum, G.I.J.M. Kempen, A.J.H.M. Beurskens, K.J. Hajema, H.C.W. de Vet. *J Frailty Aging* 2019;8(4)180-185
- DEVELOPMENT OF SIMPLE, OBJECTIVE CHAIR-STANDING ASSESSMENT OF PHYSICAL FUNCTION IN OLDER INDIVIDUALS USING A KINECTTM SENSOR. N. Takeshima, T. Kohama, M. Kusunoki, E. Fujita, S. Okada, Y. Kato, K. Kofuku, M.M. Islam, W.F. Brechue. *J Frailty Aging* 2019;8(4)186-191
- THE RELATIONSHIP BETWEEN PHYSICAL FRAILTY AND MILD COGNITIVE IMPAIRMENT IN THE ELDERLY: A SYSTEMATIC REVIEW. M. Kiiti Borges, N. Oiring de Castro Cezar, A. Silva Santos Siqueira, M. Yassuda, M. Cesari, I. Aprahamian. *J Frailty Aging* 2019;8(4)192-197
- LIVING WITH FAMILY YET EATING ALONE IS ASSOCIATED WITH FRAILTY IN COMMUNITY-DWELLING OLDER ADULTS: THE KASHIWA STUDY. U. Suthutvoravut, T. Tanaka, K. Takahashi, M. Akishita, K. Iijima. *J Frailty Aging* 2019;8(4)198-204
- AN INDIVIDUALIZED LOW-INTENSITY WALKING CLINIC LEADS TO IMPROVEMENT IN FRAILTY CHARACTERISTICS IN OLDER VETERANS. S.E. Espinoza, B. Orsak, C.-P. Wang, D. MacCarthy, D. Kellogg, B. Powers, A. Conde, M. Moris, P.R. Padala, K.P. Padala. *J Frailty Aging* 2019;8(4)205-209
- A QUALITATIVE INVESTIGATION OF THE IMPACT OF HOME-BASED PRIMARY CARE ON FAMILY CAREGIVERS. E. Wool, J.L. Shotwell, J. Slaboda, A. Kozikowski, K.L. Smith, K. Abrashkin, K.V. Rhodes, G.J. Norman, R. Pekmezaris. *J Frailty Aging* 2019;8(4)210-214
- COMPARISON OF FRAILTY SCORES IN NEWLY DIAGNOSED PATIENTS WITH MULTIPLE MYELOMA: A REVIEW. H. Mian, M. Brouwers, C.T. Kouroukis, T.M. Wildes. *J Frailty Aging* 2019;8(4)215-221
- DRUG-INDUCED HYPONATREMIA: NSAIDS, A NEGLECTED CAUSE THAT SHOULD BE CONSIDERED. S. Damanti, L. Pasina, D. Consonni, D. Azzolino, M. Cesari. *J Frailty Aging* 2019;8(4)222-223

2018 - 2019: other publications from members of the WHO Collaborating Center for Frailty (using keywords: WHO ICOPE, intrinsic capacity, frailty, sarcopenia)

Revisiting the hallmarks of aging to identify markers of biological age. **F. Guerville, P. de Souto Barreto, I. Ader, S. Andrieu, L. Casteilla, C. Dray, N. Fazilleau, S. Guyonnet, D. Langin, R. Liblau, A. Parini, P. Valet, N. Vergnolle, Y. Rolland, B. Vellas.** *J Prev Alz Dis*, December 16, 2019, <http://dx.doi.org/10.14283/jpad.2019.50>.

Association of 3-year multidomain intervention and omega-3 supplementation with frailty incidence. **Guerville F, de Souto Barreto P, Giudici KV, Rolland Y, Vellas B;** MAPT/DSA Group. *J Am Geriatr Soc*. 2019 Aug;67(8):1700-1706. doi: 10.1111/jgs.15994.

Associations of C-reactive protein and homocysteine concentrations with the impairment of intrinsic capacity domains over a 5-year follow-up among community-dwelling older adults at risk of cognitive decline (MAPT Study). **Giudici KV, de Souto Barreto P, Guerville F, Beard J, Araujo de Carvalho I, Andrieu S, Rolland Y, Vellas B;** for MAPT/DSA Group. *Experimental Gerontology* 2019; 127:110716.

Prospective association of white matter hyperintensity volume and frailty in older adults. **Maltais M, de Souto Barreto P, Moon SY, Rolland Y, Vellas B;** MAPT/DSA Study Group. *Exp Gerontol*. 2019 Apr;118:51-54. doi: 10.1016/j.exger.2019.01.007.

Defining vitality: associations of three operational definitions of vitality with disability in instrumental activities of daily living and frailty among elderly over a 3-year follow-up (MAPT Study). **Giudici KV, de Souto Barreto P, Soriano G, Rolland Y, Vellas B;** for MAPT/DSA Group. *Journal of Nutrition Health & Aging* 2019; 23:386-392. doi: 10.1007/s12603-019-1175-0.

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