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ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

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GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

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AN IN-DEPTH ASSESSMENT OF THE TUMOR'S IMPACT ON SARCOPENIA

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Abstract.

Background: Loss of muscle mass is a typical symptom of cancer and it is strongly correlated with poor prognosis. Cancer-related Sarcopenia is unresponsive to conventional dietary changes and exercise, in contrast to age-associated muscle atrophy. This particular type of weakness differs from different kinds of muscle loss in that it is triggered by a number of interrelated mechanisms, notably inflammatory processes, abnormal metabolic processes, proteolysis, and autophagy.

Objective: This research is to examine evidence supporting the theory that tumors have a causal role in causing muscular atrophy. It seeks to investigate the precise regulators that the tumour generates and how they affect the processes that result in muscle waste. The evaluation looks for new directions for further studies and medical treatments.

Method: The analysis is based on a thorough examination of the scientific literature and research that shows how tumor and muscle atrophy are related. It concentrates on studies that clarify the numerous strategies by which malignancies cause the loss of muscle.

Results: This article highlights particular mechanisms by which these tumor-derived substances affect the development of muscle loss, including inflammatory processes, metabolic disturbance, proteolysis, and autophagy.

Conclusion: The discovery of such targets offers hope for the creation of efficient treatment strategies that can enhance the long-term outlook and quality of life of cancer sufferers who are experiencing muscle loss.

Key words. Loss of muscle, tumor, cancer sufferers, medical treatment, inflammatory.

Introduction.

Sarcopenia is characterized by the age-related reduction in muscle mass and strength that represents a notable risk factor for conditions such as fractures and aspiration pneumonia. The term flailing is closely associated with this condition [1]. The European Working Group on Sarcopenia in Older People (EWGSOP) has pushed for a wider use of the term Sarcopenia to include a variety of age-related conditions that affects the elder people. We advocated for broadening the scope of Sarcopenia to include not only weakness and inactivity but also muscle loss [2]. Depending on its root cause, Sarcopenia is categorized as either primary or secondary. The main cause of primary sarcopenia is thought to be the aging process, but secondary sarcopenia is brought by things like inactivity, malnutrition, organ malfunction, invasive medical procedures, and underlying disorders like cancer [3]. Previous definitions of Sarcopenia focused on the decrease of muscle mass associated with advancing age, which mostly affected the elder. The EWGSOP has pushed for a broader definition of Sarcopenia [4].

We should expect a rise in the number of people suffering from primary sarcopenia and secondary sarcopenia illnesses like cancer as the world's population ages. Sarcopenia is becoming recognized as a serious issue in the field of cancer treatment [5]. Numerous researches have looked at the relationship between sarcopenia and cancer, notably in the contexts of hepatobiliary and gastric cancer. A sizable percentage of patients with advanced stomach cancer struggle with issues linked to poor nutritional intake, which results in inadequate nutrition [6]. Even in cases of early gastric cancer, surgical operations have been seen to limit the stomach's ability for digestion, resulting in a reduction in meal intake and considerable weight loss [7]. This emphasizes how important it is for healthcare practitioners to have the necessary skills and approaches to manage stomach cancer in such individuals. Although Sarcopenia is a growing concern in the medical community, it is not assessed in the preoperative examination because of the focus on other factors [8]. The study [9] determined initially, 181 individuals were found to have aneurysm/mesenteric stenos are (a/mSTS). Among them, 89 individuals satisfied the particular standards needed to evaluate the skeletal muscle index (SMI) in the setting of severe mental illness (SMI). Baseline CT images were processed with institutionally specific software. The study [10] was to perform a literature analysis to determine the importance of Sarcopenia assessment in relation to the management of hepatocellular carcinoma (HCC). The study goal was to provide doctors with the most recent and useful research so they may make educated result. In the study, [11] examined a retrospective cohort of 261 patients who had been treated with immune suppressive drugs (ICIs) for metastatic solid tumors. When a person had a body mass index (BMI) of less than 25 kg/m^2, they considered them to have low muscle mass if their muscular tissue index was less than 41 cm^2/m^2 for females and less than 43 cm^2/m^2 for males. Low muscular mass was determined to be an index of muscle tone below 53 cm^2/m^2 if the BMI was equal to or higher than 25 kg/m^2. The study [12] investigated the impact of Sarcopenia on the prognosis of patients with Head and Neck Cancer (HNC) as they carried out an extensive electronic database search. They used a random-effects model to evaluate HRs based on various treatment

modalities. Using Comprehensive Meta-Analysis software, they conducted statistical analyses. The research [13] analyzed a total of 48 individuals who had undergone sacrectomy. In addition, 17 of them had locally recurring carcinomas. The PLVI, also known as the poses: lumbar vertebra index was employed by the researchers to assess central Sarcopenia. The research [14] was to investigate the potential association between Sarcopenia and the chance of developing morbidity within 90 days of liver resection surgery for malignant tumors. Initially, computerized CT images were utilized to calculate the SMI, and the handle power testing was performed to evaluate health of the muscles. The research [15] was a retrospective analysis of medical data for 248 male patients diagnosed with squamous cell esophageal cancer. These individuals were treated with neo adjuvant chemo radiation (NACRT) and it had curative surgery.

Study [16] evaluated CT scans targeted at the mid-level of the third lumbar vertebra are utilized for Sarcopenia assessment. In these scans, every muscle structure is identified, and its surface area is calculated. Numerous studies have shown that Sarcopenia has a negative impact on individuals getting radiation for head and neck, esophageal, rectal, pancreatic, cervical, and lung cancers. Patients with colon cancer who had laparoscopic surgery participated in the trial, which ran from November 2010 to October 2014. Prior to surgery CT scans were used to estimate the amount of muscle and fatty tissue around the patient's third L3 to determine their body composition. Skeletal muscle index and Sarcopenia status were calculated using L3 skeletal muscle area [17]. The purpose of this research is to better understand the progression of muscle wasting caused by tumors in cancer patients. To address this problem and enhance the wellbeing of cancer patients who have lost muscle, it also looks to discover prospective avenues for more study and medicinal therapies.

Materials and Methods.

Dataset.

The study consists of a total of 99 patient-related data points in the database. Participants' average age was 77.24 years for this research. The goal is to determine the probable severity of Sarcopenia in these individuals by comparing them to other patients. The gender-specific parameters used to evaluate patients at the Tijuana General Hospital which shown in Table 1. The poor of Baja California, particularly those of Tijuana, Ensenada, Tecate, Mexicali, and Rosarito, are among the patients treated at this hospital [18].

Evaluation of Sarcopenia.

Muscle mass, strength and physical function are important to measure diagnose Sarcopenia. These metrics have been measured using a variety of techniques for research and therapeutic purposes, but there is a lack of standardization, leading to different ways to assess each parameter. The direct and indirect techniques are the two main ways to measure muscle mass. Direct approaches entail a quantitative evaluation of the muscle mass throughout the entire body through the study of body composition. Typically, methods like dual-energy X-ray absorptiometry (DEXA) or bioelectrical impedance analysis (BIA) are used. Indirect techniques are used to calculate muscle mass by measuring the cross-sectional area of particular muscle groups. Through diagnostic imaging, particularly computed tomography (CT), which employs the third lumbar level as a typical reference, muscle area is measured indirectly. Muscle mass has been measured indirectly in prior studies using techniques such CT scanning. Although both direct and indirect measuring methods provide an accurate and consistent data, it should be noted that they can be rather expensive, which could be a disadvantage. Since CT scans are used for staging and follow-up in almost all situations, it is simple to use the indirect CT approach to measure muscle mass. In terms of measuring physical function, walking speed is a typical measure, and a threshold of 0.8 m/s is frequently used.The difficulty of collecting baseline CT readings for muscle mass in a healthy group due to worries about radiation exposure is one of the difficulties that experienced in sarcopenia investigations. The comparison between cohorts of cancer patients and healthy people can be hampered by this barrier. The optimum cutoff values for sarcopenia definition must be found, however it's crucial to remember that recent research have highlighted a common flaw in many research. Particularly, they fail to take into the substantial differences that are brought by variables like gender, race, and tumor stage. Given these factors, a shrewd strategy would entail by choosing the best cutoff value for each distinct cohort studied.

Table 1. *Functioning Parameters and Demographics by Gender in a Study Cohort.*

Gender	*Grip Strength*	*Body Mass Index (BMI)*	*Walking Speed*
Men 35%	<30	<8.5 kg/m2	<0.8
Women 65%	<20	<6.1 kg/m2	<0.8

Sarcopenia assessment methods:

Diagnostic methods for sarcopenia assessment were established in 2010 by the European EWGSOP. Additional guidelines from the Asian Working Group for Sarcopenia (AWGS). Consistent with the notion that Sarcopenia is related with the elderly population, it is important to note that the EWGSOP and AWGS categories target the persons who are 60 or 65 years old or older. Clinical examination, imaging assessment, functional evaluation, laboratory testing, and the use of specialized Sarcopenia screening equipment are necessary to diagnose Sarcopenia.

Imaging assessment:

Muscle mass and fat content may be measured using imaging examinations, such as DXA, CT scans, and magnetic resonance imaging (MRI). The diagnosis of muscle loss and fatty infiltration is made easier by the precise viewing of muscle tissue made possible by these imaging modalities.

Clinical assessment:

The clinical assessment is essential in the diagnosis of Sarcopenia. Measurements of grip strength, gait speed, and muscular circumference are typical examples. Medical professionals may evaluate a patient's mobility and muscle strength using these assessments.

Laboratory assessments:

Blood tests that can find muscular health-related indicators are part of laboratory evaluations. Markers such as creatinine,

misstating, and C-reactive protein may be included in these tests, these markers can offer important information about how muscles work and inflammation.

Sarcopenia screening tools:

Specific sarcopenia screening techniques have been created to assist in early identification in addition to these approaches. The EWGSOP created a number of helpful tools for assessing the risk of Sarcopenia in the elderly, including the SARC-F questionnaire.

Sarcopenia obesity:

There is not a common definition of Sarcopenia obesity among medical professionals. There are several methods for classifying people as having Sarcopenia obesity. Age-related muscle loss and obesity combine to form a disease known as Sarcopenia obesity. As muscle mass ages, the body's ability to burn fat deteriorates. As a result, this loss of muscle mass increases the tendency to store fat, which accelerates the development of obesity. Some definitions of Sarcopenia obesity include people who have Sarcopenia even when they have a high BMI, obscuring the distinction between both disorders. According to the study, people with Sarcopenia obesity have a higher risk of having surgery which can go wrong, having their physical abilities restricted, and dying younger. As a result, we underline how important it is to use a technique that can recognize individuals with Sarcopenia obesity and ensure their inclusion in pertinent research and investigations. Obesity caused by Sarcopenia has been linked to a greater risk of surgical complications and a lower life expectancy. Figure 1 shows a visual comparison between the muscle mass and structure of an atrophying arm and that of a normal healthy adult.

Sarcopenia prevalence:

Several studies have examined the frequency of Sarcopenia in people following surgery for gastrointestinal cancer, which was determined by measuring skeletal muscle mass with CT scans. Despite the identical age and gender distributions among the participants in these investigations, a broad variety of prevalence rates for this ailment have been found. Preoperative Sarcopenia rates in patients with an esophageal and gastric cancer ranged from 43% to 79%. Sarcopenia was less variable in patients undergoing a surgical removal for hepatocellular carcinoma, metastatic colon cancer, or systemic intestinal metastasis. The use of various diagnostic criteria in this research might be blamed for the variations in prevalence. Although there are Sarcopenia diagnostic criteria, it is difficult to create globally accepted standards. Different studies use different thresholds for assessing muscular strength and mass, which an account for the observed variations in prevalence.

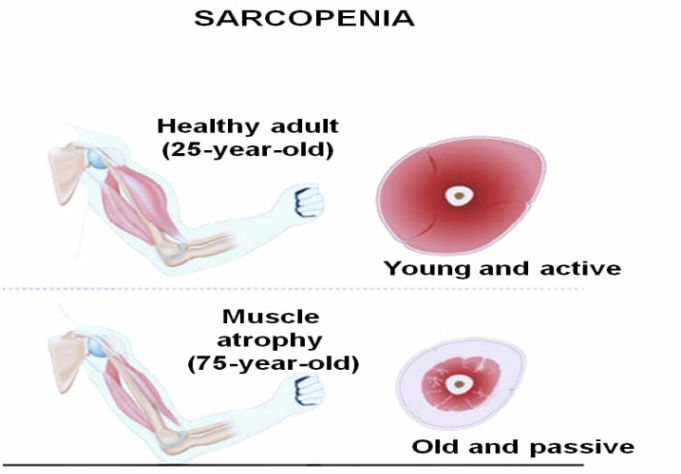

Figure 1. *A visual comparison between the muscle mass and structure of an atrophying arm and that of a normal healthy adult.*

Gender: According to the available data, the incidence of Sarcopenia varies significantly across sexes. Due to variables such as lesser beginning muscle mass compared to males; women are flatter to suffer Sarcopenia. The pace at which a person loses muscle mass, however, might vary considerably.

Age: The elderly are disproportionately affected by Sarcopenia. Sarcopenia is more likely to occur as a result of the natural aging process, which causes a decline in muscle mass and function. The over-60 and -65 crowds tend to have a higher prevalence rate.

Geographical and Ethnic Differences: Prevalence rates may also vary by race or place of origin. Depending on factors including food, exercise, and genetics, certain populations may be more prone to Sarcopenia than others.

Diagnostic Criteria: Many different groups and institutes use a wide range of diagnostic criteria and methodologies to assess Sarcopenia. Various characteristics, such as thresholds for muscle mass and function, might alter the predicted prevalence. Prevalence estimates are affected, for instance, since the thresholds proposed by the Asian Working Group for Sarcopenia (AWGS) and the EWGSOP disagree.

Socioeconomic Factors: Sarcopenia rates might be affected by dietary habits, healthcare availability, and housing conditions. Those who have fewer options for maintaining their muscle fitness may be at greater danger.

Factors that influence the prevalence of Sarcopenia include but are not limited to age, gender, diagnostic criteria, location, health status (both mental and physical), and socioeconomic status. Estimates of the prevalence of Sarcopenia might fluctuate between communities and research studies. Healthcare professionals and academics must consider these factors while assessing and managing sarcopenia in certain populations of persons. Table 2 shows the percentage of men and women who fall into the four weight categories (normal, underweight, overweight, and obese). This statistic shows that more women than men are of healthy weight, more men than women are either underweight or overweight displays in Figure 2. Men and women are broken down by age in the Table 3 below, with percentages shown across five categories displays in Figure 3. A larger percentage of males than women may be seen throughout age groups.

Relation between Sarcopenia and Overall Survival.

Understanding the effects of Sarcopenia on people is crucial, especially in the context of other health disorders including cancer, chronic illnesses, and aging. One such condition is Sarcopenia, which has a direct correlation with overall survival.

Table 2. *Result of Weight Categories by Gender.*

Prevalence (%)				
Gender	**Normal weight**	**Under weight**	**Overweight**	**Obese**
Men	41.8	71.4	15.3	2.3
Women	46.2	76.9	18.9	1.8

Table 3. *Result of Age Distribution by Gender.*

Age	Men	Women
60-65	8.1	14.3
65-70	13.5	13.2
70-75	20.3	17.2
75-80	29.7	25.2
>80	39.3	38.2

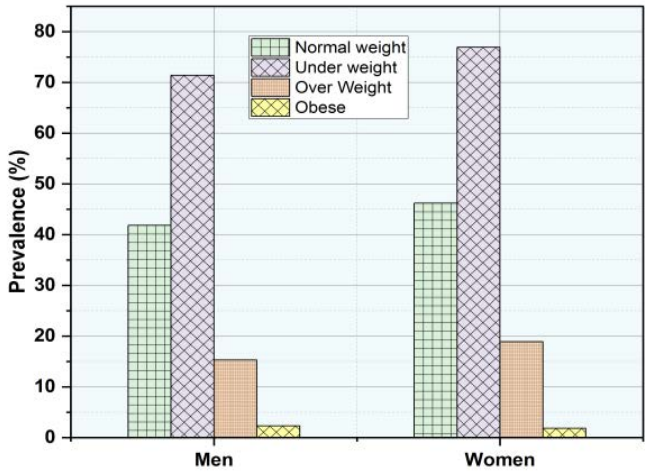

Figure 2. *Prevalence of Weight Categories by Gender.*

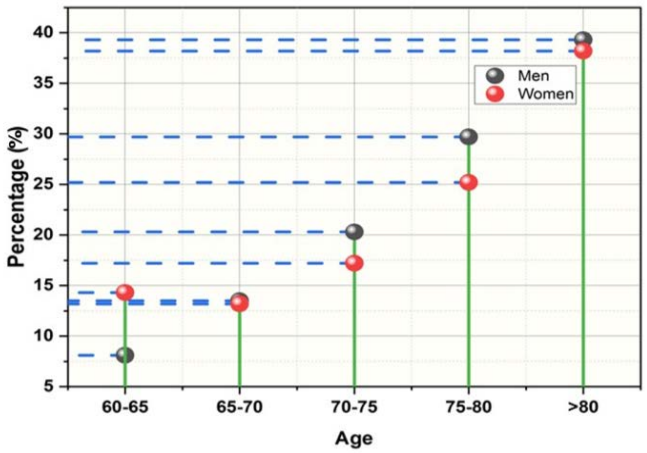

Figure 3. *Age Distribution by Gender.*

The relationship between Sarcopenia and general survival is discussed below:

Cancer Patients: Numerous studies have demonstrated a strong correlation between Sarcopenia and decreased overall survival when it comes to cancer. Sarcopenia cancer patients have longer hospital admissions, more treatment-related problems, and worse results. Increased mortality from gastrointestinal, lung,

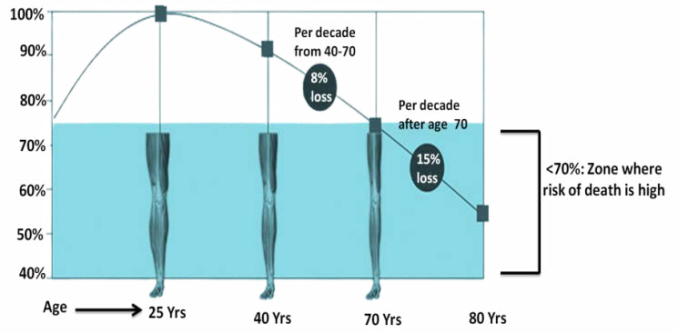

Figure 4. *Muscle atrophy (Sarcopenia) becomes more common as we become older.*

and pancreatic malignancies are associated with Sarcopenia. Sarcopenia patients may be less resistant to cancer therapies like chemotherapy and radiation therapy, which might affect their overall survival.

Multifactorial Influence: There is a connection between Sarcopenia and overall survival, although the root reasons are unclear. There are several factors that might influence this connection, such as one's nutrition, level of physical activity, inflammation, and the presence of other diseases.

Treatment Outcomes: The effects of surgical and other medical treatments may be diminished by Sarcopenia. The healing period for patients with Sarcopenia is longer, and they are more likely to have problems after surgery. Especially, if they are undergoing major surgery, this may have a direct impact on how long they survive.

Aging: Ageing always causes a Sarcopenia. Sarcopenia has been linked to an increased risk of fractures, fragility in the elderly, and decreased functional independence. A decrease in life expectancy might result from the fact that the elderly are less resilient in the face of adversity.

In the context of cancer and other chronic diseases, Sarcopenia is particularly important in determining overall survival. It has an impact on a person's capacity for treatment, the level of healing, and levels of functional independence all have a crucial element in determining a person's life expectancy. To increase the overall survival rate and quality of life for those who are affected by sarcopenia, early diagnosis and treatment are crucial.

Quality of Life and Depression.

Sarcopenia is linked to lower quality of life and depression in patients who have just received an announcement that their cancer is incurable. According to research, sarcopenia is linked to physical decline that impairs functional ability and lowers cancer patients' quality of life. Sarcopenia and depression in cancer patients may also be related; this is because depressed symptoms have been linked to decreased appetite or physical activity. It shall be able to identify patients with advanced cancer who are more likely to experience a decline in their physical and mental well-being by evaluating them for the presence of sarcopenia using periodic CT scans. Hence, in order to better satisfy these patients' demands, the developers might employ methods and various techniques.

Impact of Sarcopenia.

The elderly in particular, those with chronic illnesses, and

people who have specific malignancies are significantly impacted by this complicated disorder. Sarcopenia has a significant impact on a person's physical strength, endurance, and general functional ability. Loss of muscle mass can make it more difficult to complete daily actions like walking, climbing stairs, or lifting goods. Muscle mass is essential for daily activities. As a result, people with Sarcopenia have less mobility and a higher risk of fractures and falls, which further reduces their independence and quality of life. Sarcopenia presents a special difficulty when compared to chronic illnesses and cancer. Chemotherapy, radiation therapy, and surgery are common therapies that Sarcopenia patients have trouble in tolerating. In addition, the condition can raise the chance of treatment-related adverse effects and lengthen hospital stays and postoperative difficulties. The overall prognosis and quality of life of those who are impacted by all of these factors taken together. In addition, Sarcopenia affects more than the musculoskeletal system; it also affects a general health. Inflammation Sarcopenia can be a factor in a number of medical conditions, such as heart problems, impaired immunological response, and chronic pain. Sarcopenia has an effect on a person's life in many different areas. It has an impact on bodily functions, the effectiveness of medical treatments, metabolic health, psychological well-being, and general quality of life. To create comprehensive methods for prevention, diagnosis, and management of Sarcopenia and, ultimately, to improve the wellbeing of those who live with this illness, healthcare practitioners, researchers, and affected persons must understand the multidimensional nature of the disorder. Muscle atrophy (Sarcopenia) is clearly age-related, as shown in Figure 4, which also highlights the condition's prevalence as people live longer.

Pharmacological Interventions for Treatment of Sarcopenia.

Academics and medical professionals are examining strategies to address muscle loss and functional impairment associated with sarcopenia, with a particular focus on pharmacological therapies. It is attempted to tackle this disease using a number of potential strategies. The creation of myostatin inhibitors is a noteworthy instance of pharmaceutical intervention. The development of Sarcopenia is influenced by the protein myostatin, which controls muscle growth and regeneration. Increases in muscle growth and strength may result from myostatin inhibition. It is researched how a various experimental medications and treatments are affected by myostatin. Pharmacological approaches for Sarcopenia are a subject that is always changing, and research is always done to improve the efficacy and safety of these treatments. It is imperative to stress that these therapies are frequently a component of all-encompassing therapy that can also involve physical activity, dietary assistance, and lifestyle changes. Adapting these therapies to the unique demands and circumstances of Sarcopenia patients is a crucial task for healthcare practitioners. There is optimism that as research into Sarcopenia progresses, more pharmacological options will become accessible that helps the patients' to enhance the quality of life and muscle health.

Discussion.

There are differences in the diagnostic criteria for Sarcopenia used by various organizations and research teams, which affects prevalence rates and makes it difficult to develop consistent norms. The precise identification of those at risk for Sarcopenia and standardized clinical therapy can be hampered by this lack of agreement [19]. The diagnostic techniques may not be without flaws. Functional evaluations of physical performance may not completely account for the complexity of muscle loss since variables including motivation, discomfort, and neurological problems might skew the results [20]. Similar to clinical evaluations, laboratory tests might not be sensitive enough to spot early muscle loss. Additionally, the examination of Sarcopenia concentrates on the older population. Although these methods are beneficial and they provide a quantitative assessment of muscle size and performance [21]. The importance of qualitative factors, such as muscle quality and composition (such as muscular fat infiltration), is underappreciated. While essential for diagnosing and treating this illness, Sarcopenia evaluation approaches have drawbacks and limits. The definition of Sarcopenia should be expanded to include different age groups and qualitative elements of muscle health [22]. Work should be done to standardize diagnostic criteria and increase the accessibility of evaluation instruments.

Conclusion.

In the preoperative evaluation of cancer patients, measuring muscle mass is a simple and affordable way to identify Sarcopenia. Additionally, this evaluation is carried out as a part of the staging procedure. The muscle loss disease Sarcopenia has been shown to impact survival rates and increase the likelihood of complications after surgery. Early diagnosis and targeted treatment are significantly aided by Sarcopenia testing. Clinical evaluations, imaging techniques, functional evaluations, and laboratory testing are only a few examples of many possible ways for assessing muscle health. The gaps and constraints in diagnostic criteria and accessibility must be recognized, as they can compromise the consistency of evaluation procedures. Muscle mass measured by CT scans is a crucial factor in determining whether or not a patient should undergo surgery, especially for those that have been medically declared unsuitable high risk of problems during the procedure. Early diagnosis of Sarcopenia in this group will pave the way for more effective care, such as prehabilitation, which has a positive effects on patients' short- and long-term health. The inconsistency of assessment methods for determining muscle health in cancer patients may be problematic due to accessibility challenges and disparities in diagnostic criteria. Preoperative CT scans of the muscle mass are crucial, especially for individuals who are deemed unfit for surgery or at high risk for problems. This evaluation makes it possible to spot the signs of Sarcopenia and begin preparation or other specialized treatments aimed at improving the patient's immediate and long-term health. Enhancing the assessment methods and expanding the range of preoperative medicines is the focus of future research.

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