

RECOMMENDATIONS

We recommend the followings:

1. Long term and regular but non strenuous physical activity, even for 30 minutes of activity over the course of the day, is an important strategy for the reduction or prevention of functional decline with aging.
2. Study the effect regular physical activity as a therapeutic low cost intervention in many organic and psychological diseases.
3. Study the effect of exercise training on immune markers.

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المخلص العربي

يمكن تعريف الشيخوخة باعتبارها آلية معقدة من عمليات تدريجية لا رجعة فيها وهي تحدث في الجزيئات و الخلايا وتؤدي في النهاية إلى موت الأجهزة الحيوية. و بفهم أفضل للآليات الجزيئية والخلوية للشيخوخة نجد بعض الأمل في إيجاد الحلول الممكنة لإبطاء عملية الشيخوخة .

وقد اقترحت نظرية الإلتهابات الجزيئية للشيخوخة تورط الأكسجين التفاعلي ، النيتروجين و بعض الجزيئات المحفزة في عملية الشيخوخة وإعتبارهم عناصراً رئيسية مشاركة فيها. كما يساهم أيضا ارتفاع معدل الاكسدة في تنمية وجود الإلتهابات والأمراض المزمنة المصاحبة للشيخوخة.

كما يُعرف **الإلتهاب المزمن ذو الدرجة المنخفضة** بأنه ارتفاع بسيط في مستوى تركيزات السيتوكينات المؤالية للإلتهابات في الجسم مثل: مُعامل نخر الورم -ألفا (TNF- α) و مُختصر البروتين التفاعلي- سي (C-RP) كمثالاً للبروتينات الحادة ؛ و يرتبط هذا الإلتهاب بتصلب الشرايين ومقاومة الإنسولين. هناك ارتباط وثيق بين الارتفاعات المزمنة من الدرجة المنخفضة في هذه الجزيئات المحفزة للإلتهابات و ما بين خطر ارتفاع معدلات المراضة بشكل مستقل عن الأمراض الموجودة مسبقاً، مما يشير إلى أن هذه السيتوكينات المسنين غير ملاحظة إكلينيكيًا .

و تُمثل تدخلات نمط الحياة كممارسة التمارين الرياضيه والحيمه الغذائية بديلاً منخفض التكلفة و ممتد المفعول للحد من الإلتهابات والتدهور الحيوي للمُسن . كما يُوصى بالمواظبة على النشاط البدني و إعتباره استراتيجية هامة للحد من التدهور الوظيفي المُصاحب للشيخوخة. وبالإضافة إلى ذلك، فإن النشاط البدني يُقلل من خطر الإصابة بعدد كبير من الأمراض المزمنة .

هدفنا في هذه الدراسة إلى :

دراسة مستوى مختصر البروتين التفاعلي- سي (CRP) و معامل نخر الورم- ألفا (TNF- α) عند كبار السن قبل و بعد القيام بتمارين مقاومة .

المرضى ومواد البحث :

لقد أجريت هذه الدراسة علي إجمالي ٣٠ مُسن تتراوح أعمارهم بين ٦٠ عاماً أو أكثر، من كلا الجنسين، من ليس لهم أى تاريخ مرضى مثل مرض السكري، ارتفاع ضغط الدم ، أمراض الكبد أو أمراض الكلى. وقد تم الإستعانه بهؤلاء المُسنين من خلال توافدهم على قسم الطب الطبيعي، أمراض الروماتيزم والتأهيل في مستشفى الحضرة بجامعة الإسكندرية ، حيث تم أخذ التاريخ المرضي الكامل منهم ، وتم أيضاً عمل الفحص السريري الكامل و تم القيام بعمل رسم قلب (ECG) لكل المشاركين في الدراسة قبل بدء التمرينات.

كما تم عمل هذه الفحوصات المعملية للمجموعة التي تمت عليها الدراسة :

• **الفحوص المختبرية الروتينية:** صورة دم كاملة، سكر عشوائي في الدم (RBS)، وإختبارات وظائف الكلى مُثله في : البولينا ، الكرياتينين في الدم وتقييم معدل ترشيح الكبيبي الكلوي (GFR) من خلال تعديل النظام الغذائي في مجال أمراض الكلى (MDRD) .

• **الدلالات المعملية الدقيقة للإلتهابات :** (و قد تم قياسها مرتين قبل وبعد ممارسة التمارين)

١. مُعامل نخر الورم-ألفا (TNF- α) .

٢. - مُختصر البروتين التفاعلي- سي (CRP).

تدريبات المقاومة البدنية :

جميع كبار السن المشاركين في هذه الدراسة تعرضوا لجلسات تدريبيه لممارسة تمارين مقاومه بدنية ثلاث مرات أسبوعياً لمدة أربعة أسابيع متتاليه . وقد اشتمل البرنامج التدريبي ممارسة منخفضة الحدة تم تنفيذها على جهاز كينسيس (Kinesis) لكلا الأطراف العلوية والسفلية. وتكون التدريب من ثلاث مراحل: فترة الإحماء الأوليه لمدة خمس دقائق ، وانتهت بفترة راحه وإسترخاء لمدة خمس دقائق أخرى ، بينهما فترة تدريبات المقاومة الرئيسييه لمدة ٣٠ دقيقة والتي تتألف من:

- تدريب المقاومة لعضلات الإنشاء الخلفي للساق (dorsiflexors) (ويتم عن طريق إرفاق كابل يربط بالقدم من الأرض، ثم يتم رفع كل ساق علي حداً لأعلى بصورة متكرره).
 - تدريبات الجر الأماميه للجزع (ويتم فيها الإستعانه بكابل يُشد أفقياً ويُجر للأمام أيضاً بصورة متكرره).
 - تدريبات الجر العمودي للأطراف العلوية (و يتم تنفيذها عن طريق شد الكابل من أعلى لأسفل باستخدام الذراعين منفصلين كلا عل حده بحركات متكرره).
- و قد أسفرت نتائج هذه الدراسة عن :

إنخفاض ملحوظ وذو دلالة إحصائية في مستوى كل من مُعامل نخر الورم-ألفا (TNF- α) و مُختصر البروتين التفاعلي- سي(CRP) وذلك عند إعادة قياسهما بعد الإنتهاء من أداء برنامج تمارين المقاومة البدنيه لمدة أربعة أسابيع متتاليه ، وذلك قياساً بمستواهما في البداية قبل ممارسة التمارين في نفس الأفراد.

طبقاً للنتائج السابقة يمكن أن نصل إلى استنتاج مفاده أن:

- هناك ارتباط سلبي و ذو دلالة إحصائية بين مستوي كل من مُعامل نخر الورم-ألفا (TNF- α) و مُختصر البروتين التفاعلي- سي(CRP) في مصل الدّم وبين تمارينات المقاومة البدنيه.
- ممارسة تمارين المقاومة تُمثل إستراتيجية بل و آليه مُخفضة التكلفة تعمل علي تقليل الإلتهابات المُرتبطة بتقدم العمر من خلال خفض مستويات دلالات الإلتهابات مما يؤدي إلي تحسين نوعي في نمط الحياة لدى كبار السن.



جامعة الإسكندرية
كلية الطب
قسم الأمراض الباطنة

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رسالة مقدمة

لقسم الأمراض الباطنة - كلية الطب - جامعة الإسكندرية
ضمن متطلبات درجة

الماجستير

فى

الأمراض الباطنة

من

شيماء أحمد إبراهيم محمود عبد المنعم

بكالوريوس الطب والجراحة، ٢٠٠٦

كلية الطب، جامعة الإسكندرية

[٢٠١٥]



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رسالة مقدمة من

شيماء أحمد إبراهيم محمود عبد المنعم

للحصول على درجة

الماجستير

في

الأمراض الباطنة

التوقيع

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لجنة المناقشة والحكم على الرسالة

أ.د/ محمد احمد مهنا

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