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سامية محمد مصطفى

# بسم الله الرحمن الرحيم

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شبكة المعلومات الجامعية

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# شبكة المعلومات الجامعية

# التوثيق الالكتروني والميكروفيلم

سامية محمد مصطفى

شبكة المعلومات الجامعية

# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

# قسم

## نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

# يجب أن

## تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

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# بعض الوثائق
# الأصلية تالفة

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# بالرسالة صفحات لم ترد بالأصل

# Canal Shaping Ability And Wear Resistance Of NiTi LightSpeed Instruments:

## Effect Of Rotational Speed.

(An invitro study)

A thesis submitted to the Faculty of Oral and Dental Medicine, Cairo University, in partial fulfillment of requirements of the Master of Dental Science (Endodontics).

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Biomechanical preparation is the most important factor in the success of endodontic treatment. Instrumentation objectives include debriding the root canal system, maintaining the apical foramen in its original position, keeping the apical foramen as small as practical and developing a continuously tapering conical form as stated by Schilder.

These objectives are easily achieved in straight root canals with the traditional stainless steel files. However, they have shown to create aberrations in the root canals due to canal morphology (curvature) and instrument limitation (stiffness and design).

There is a degree of canal curvature present in most of the teeth of the human dentition. The stiffness of the instrument and its design tend to straighten these curved canals. It also may lead to difficulty in debridement, ledge, transportation of apical foramen, root perforation, apical zipping and strip perforation which in turn may lead to failure of endodontic therapy.

To reduce these procedural errors, modifications were done in instrumentation technique as well as in instrument design. Some of the instrumentation technique modifications are the step-back, anti-curvature filing, step down and balanced force technique for root canal preparation. Where as in instrument design, modifications were made in cross section and tip configuration. The change in cross section of the instrument was to increase its flexibility and maintain its centrability inside the canal e.g. K-Flex, Uni-file and S-file. Also, the change to a non-cutting pilot tip as Flex-R files was found to reduce the risk of perforation and ledging. However, the use of these modified stainless steel files in curved canals is still risky and