DEDICATED INSTRUMENTS

M-ARS ACL TRAY
(2 LEVELS)

KNEE GENERAL TRAY
(1 LEVEL)

KNEE PREP. TABLE TRAY
(1 LEVEL)

DEDICATED SURGICAL TECHNIQUE

1. Graft Preparation

2. Graft Reinforcement

3. Femoral Tunnel Creation

4. Tibial Tunnel Creation

5. Anatomical Tunnels

6. Anatomical Graft Insertion

Images 2 and 6 by courtesy of Prof. Dr. Christian Fink, Gelenkpunkt, Innsbruck - Austria

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MEDACTA ANATOMIC RIBBON SURGERY

REDISCOVER THE ANATOMICAL WAY

Brochure

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INTRODUCTION

ANATOMY

The main function of the ACL is the restraint of anteroposterior translation of the tibia relative to the femur. It also acts as a secondary restraint to tibial rotation and valgus or varus stress.

EPIDEMIOLOGY

The mechanism of injury is typically a sudden deceleration or rotational maneuver with a force that sends the tibia one way and the femur another (typically because the foot is planted and the body spins). The incidence of ACL tears is considered a common orthopedic injury with an annual incidence of 68.6 on 100.000 population in US[1] and 77.4 on 100.000 in Australia.[2]

TREATMENT

Anterior cruciate ligament (ACL) reconstruction has evolved considerably over the past 30 years. This has largely been due to a better understanding of ACL anatomy and in particular due to a precise description of the femoral and tibial insertions of its two bundles. [3]

Based on anatomical studies[4,5,6,7,8,11,13] and thanks to the experiences learned in recent years[3], there is a better understanding of the anatomy and biomechanics of the ACL. It has been documented that the ACL is neither round nor double round but it is flat (ribbon-like) with a specific C-shape tibial insertion. [4,5,6,7,8,11,13]

Images by courtesy of Dr. med. Robert Smigielski, Mirai Institute, Warsaw - Poland

The current trend in ACL reconstruction is to be more anatomical respecting ACL bone insertion and the kinematics of the native ACL.[9,10,12]

(A) Cadaveric dissection of the right lateral femoral condyle. Notice that the femoral insertion of ribbon-like ACL fibres is in line with posterior femoral cortex (marked with black dotted line (B)).

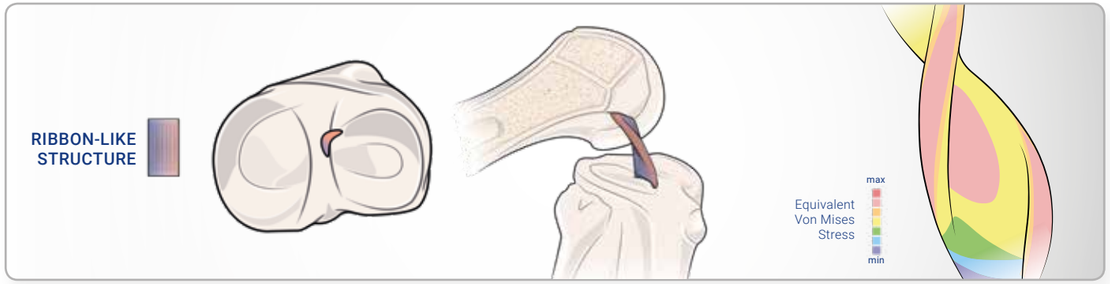
WHY M-ARS ACL?

M-ARS ACL is an original concept to mimic the native anatomical ACL in cruciate ligament reconstruction:

- **INNOVATIVE SINGLE BUNDLE WITH MORE NATURAL STRESS DISTRIBUTION**
- **IMPROVED HEALING**
- **DEDICATED IMPLANTS**
- **DEDICATED INSTRUMENTS**
- **DEDICATED SURGICAL TECHNIQUE**

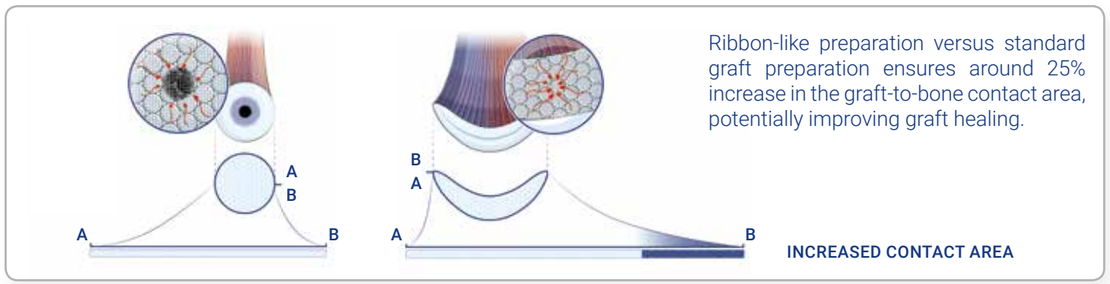
INNOVATIVE SINGLE BUNDLE WITH MORE NATURAL STRESS DISTRIBUTION

The ribbon-like structure of the graft does reproduce the anatomy and can potentially better replicate the kinematics of the two bundles of the native ACL.



IMPROVED HEALING

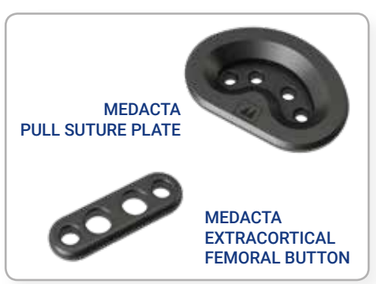
Possible lower risk of necrosis thanks to the reduced distance between the internal fibers of the ligament and the host bone: the graft's healing process is expected to be shorter compared to traditional techniques.



Ribbon-like preparation versus standard graft preparation ensures around 25% increase in the graft-to-bone contact area, potentially improving graft healing.

DEDICATED IMPLANTS

The Tibial Pull Suture Plate (PSP) is a C-shaped extra cortical fixation device which is fixed in correspondence to the tibial tunnel, with its body sunk into the tibial tunnel and its edges seated on the tibial cortex, ensuring the correct orientation and tension of the graft.



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