



Management of first-time patella dislocation (FTPD): the ESSKA formal consensus

Chairmen: Florian Dirisamer, Lars Blønd

Consensus Advisor: Philippe Beaufils

This brochure is a summary of the formal consensus on the management of first-time patella dislocation. It does not contain every statement, and some of the included content may be summarized.

To access the complete material of this project, please visit:
<https://www.esska.org/page/Consensus>

GRADING DESCRIPTION

- *Grade A: high scientific level*
- *Grade B: scientific presumption*
- *Grade C: low scientific level*
- *Grade D: expert opinion*

PRESIDENTIAL FOREWORD

There is great variation across Europe when it comes to medical praxis. Agreeing a common approach to pathologies or procedures has always been a challenge. But some such agreement is important, if we are to ensure standards.

For years now, ESSKA has developed a strict and painstaking methodology which employs our considerable European expertise. We call it **ESSKA European Consensus**. Mixing scientific evidence and clinical expertise, this format aims to facilitate the dissemination of knowledge among the daily practitioners.

One must underline the scientific value of such a project which should not be regarded as a simple expert opinion but as the result of a complex process based on high level scientific criteria such as pluralism (large European

representativeness), iterative process, independence of the different involved groups.

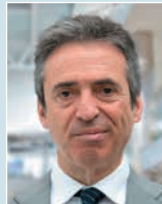
Five ESSKA consensuses have already been delivered. More information is available on <https://www.esska.org/page/Consensus>.

This year, at ESSKA 2024 Milan Congress, we are delighted to launch the **ESSKA European Consensus on Management of First Time Patella Dislocation**.

We thank Florian Dirisamer and Lars Blønd - the Project leaders-, as well as the members of the Steering, Rating, and Peer Review Groups for their tremendous efforts and dedication. A special acknowledgement also for our staff, and particularly Mrs Anna Hansen Rak, without whom this would have been not possible.



Roland Becker
ESSKA President
2022-2024



Joan Carles Monllau
ESSKA President
2024-2026



Philippe Beaufils
Consensus Projects
Advisor

CHAIRMEN FOREWORD

Patella instability is a common orthopedic problem. There is a big variety of this injury from dramatic and acute to less severe. The reason for this is the numerous different factors and circumstances leading to one final condition – the patella dislocation. So, the same diagnosis might eventually have a completely different history and pathogenesis which makes this field sometimes so complex.

Despite all the scientific output in the field of patellofemoral instability there are still many open questions that might – possibly – never be answered by clinical studies due to various reasons (e.g. inhomogeneous patient cohorts, low patient numbers in some sub-etologies). This is where a consensus project can provide valuable guidance and recommendations.

The strength of this method is to combine scientific evidence and expert opinions in the field and to have this peer reviewed concluding with the highest level of agreement. This can be extremely useful as a guideline for everybody treating patients with patella instability.

Of course there are region specific differences in health systems (availability of diagnostic modalities, limited capacities, waiting lists, ...) or long time used therapeutic traditions that are used in certain European areas. A consensus cannot respect all these local aspects in full extent. It provides – based on a very structured process – an "ideal" model

of a diagnostic or therapeutic approach that would be desirable to be possible throughout Europe, but leaves enough leeway to respect region specific circumstances. A consensus should be used to influence local health politics to improve certain issues.

First time patella dislocation (FTPD) is the starting point of objective patella instability. Either it stays a single event, or it is followed by recurrent dislocations or subluxations. Even ongoing symptoms such as patellofemoral pain or a limitation of the knee related quality of life can be expected. Interestingly there are more open questions around FTPD than for chronic cases. Starting with a clear definition of a FTPD, up to still unsolved clinical questions of whether to treat surgically or not, this ESSKA consensus is done to provide guidelines for the daily practical management of these cases.

We want to thank all who participated in this project. Starting with the members of the steering group, who proposed excellent questions and did all literature research, the members of the rating group and all peer reviewers from all over Europe, making this possible. Special thanks go to Philippe Beaufils, the ESSKA consensus advisor, Jacek Walawski, the Chairman of ESSKA's PFI committee and Anna Hansen from the ESSKA Office for their tremendous help and inspiration.



Florian Dirisamer
Chairman



Lars Blønd
Chairman

COMPOSITION OF STEERING AND LITERATURE GROUPS

P. Beaufils – France

ESSKA Consensus Projects Advisor

P. Balcarek – Germany

Literature Group Leader

J. Walawski – Poland

Chairman of the ESSKA PFI Committee

R. Akmes – Turkey

M. Askenberger – Sweden

V. Chouliaras – Greece

R. El Attal – Austria

P. Ferrua – Italy

J.M. Moñart – Spain

G. Pagenstert – Switzerland

P. Sillanpää – Finland

J. Stephen – UK

M. Vieira Da Silva – Portugal

DIAGNOSTICS

What are the relevant clinical signs in the acute phase or at a later visit after FTPD?

In the acute phase, examination of the knee might be difficult due to swelling, hemarthrosis and general or localized knee pain. However, the examination should aim to identify whether the patella was dislocated or to detect other types of injury. Suspected hemarthrosis needs further MRI investigation as soon as possible and may indicate puncture as a pain relief. When the acute phase has resolved a testing protocol consisting of the J-sign, visual assessment of axial and torsional alignment, range of motion, apprehension test/reversed dynamic patellar apprehension test and patellar glide test is recommended.

Grade D

What are the relevant factors in patient history after FTPD?

Besides the clinical investigation, patient's age, family history, bilateral symptoms of instability, and injury mechanism should be evaluated.

Grade B

Is trauma intensity leading to dislocation or the mechanism of dislocation important for further decision making?

There is an inverse correlation between the intensity of trauma leading to FTPD and the underlying pathoanatomic risk factors, meaning that low trauma intensity usually indicates more severe underlying abnormalities. Therefore, the evaluation of trauma intensity provides relevant information in a patient's workup and for clinical decision making.

Grade C

What is the patellofemoral clinical testing protocol after FTPD to be performed in every case?

Examination of the knee after a FTPD might be limited in the inflammatory acute phase due to swelling, pain, and patient anxiety. If so it should be repeated as soon as the acute phase has resolved (from days to weeks) to confirm the initial diagnosis and to assess predisposing factors, including the contralateral knee. The examination should include standing, supine and prone position assessment of coronal and axial deformity, knee joint range of motion, J-sign, patella gliding and apprehension/reversed dynamic patella apprehension test. This does not exclude the systematic examination of other knee structures.

Grade D

Do we need to demand radiographs and/or MRI in every patient with FTPD? Is the final diagnosis of FTPD a meaningful combination of clinical testing, imaging and patient history?

After FTPD, prompt radiographs (ap, lateral and axial) and MRI or MRI alone of the knee is considered mandatory to rule out osteochondral fractures and/or bony abnormalities. Radiographs are mandatory in the acute phase only in cases where there is no direct access to immediate MRI. However, an exception might be an asymptomatic patient seen relatively late after the incident who presents with a normal clinical knee examination. The final diagnosis of FTPD and the further decision making is always a meaningful combination of the complete patient workup and should not rely only on images.

Grade C

Which radiologic parameters have to be assessed?

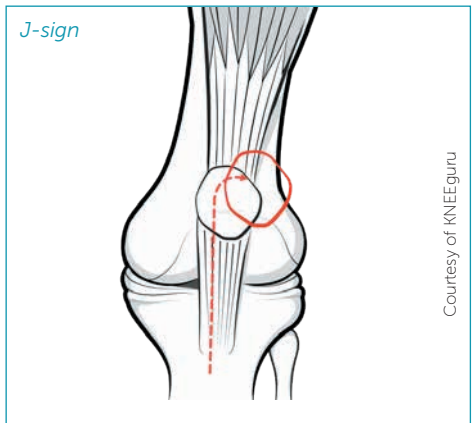
Radiological parameters to be measured - depending on clinical presentation - are patellar height, patellotrochlear overlap, trochlear geometry, and axial alignment (tibial tubercle position, knee rotation). Depending on clinical findings on coronal and rotational alignment, additional imaging evaluations may be necessary. There is currently no consensus on clear cut off values for these parameters.

Grade D

When and how should a chondral or osteochondral fracture be diagnosed?

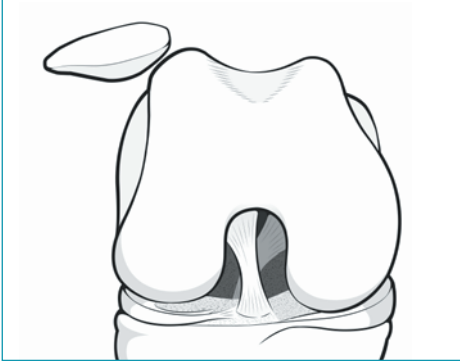
The incidence of chondral or osteochondral fractures is high, especially in pediatric patients. Hemarthrosis/Lipohemarthrosis should act as a warning sign. As chondral lesions in the patellofemoral articular area are important prognostic factors, imaging should start immediately with plain radiographs and an MRI or an MRI alone as soon as possible to detect all these chondral and osteochondral lesions and to assess reparability.

Grade C

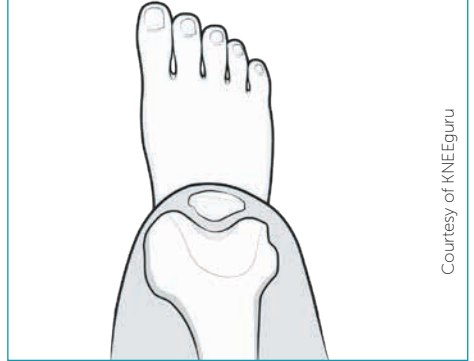


TREATMENT

patellar dislocation



patella-trochlea tracking



Courtesy of KNEEguru

Is nonoperative treatment the gold standard for FTPD in skeletally mature patients?

In skeletally mature patients' conservative treatment was the standard and most common treatment in FTPD in the past. Today, with respect to recent literature, there is a need to assess predisposing factors and the risk of ongoing symptoms and recurrence to make the final decision. Treatment should also be tailored to patient characteristics and demands. Therefore, the consensus group suggests conservative treatment only in patients with low recurrence risk and without chondral or osteochondral lesions.

Grade C

Is nonoperative treatment the gold standard for FTPD in skeletally immature patients?

Against the background of high recurrence rates in children, we cannot support non-operative treatment as the gold standard for

every single case. Skeletally immature patients with FTPD need to be thoroughly investigated to clarify the extent of predisposing factors. An individual redislocation risk estimation and a check for osteochondral or chondral fragments should be performed to stratify between surgical or nonsurgical treatment and extensively discussed with the patient and family. If the decision votes for nonoperative treatment, strict follow-up is mandatory.

Grade B

What is the role of bracing for nonoperative treatment in FTPD?

There is no evidence for the superiority in the use of any bracing (as opposed to no bracing) in FTPD either in the acute nor in the non-acute phase. Bracing with unrestricted range of motion may only be considered in the acute phase after FTPD for a very short time.

Grade B

In which cases should surgical treatment be considered in skeletally mature patients?

In skeletally mature patients the individual analysis of risk factors and the estimation of recurrence risk using one of the published scoring systems and/or ongoing symptoms or osteochondral lesions should be the basis for decision making. Therefore, primary surgical reconstruction needs to be considered a first option in patients with several risk factors and ongoing symptoms or osteochondral lesions, finally changing the old paradigm of first-line nonoperative treatment in all cases. The pros and cons of surgical versus non-surgical treatment need to be carefully discussed with the patient.

Grade C

In which cases should surgical treatment be considered in skeletally immature patients? Are there any specific clinical concerns in skeletally immature patients after FTPD?

There is a higher incidence of persistent symptoms after FTPD, especially among skeletally immature patients compared to skeletally mature patients. Therefore, the risk for further instability and thereby a higher risk of cartilage deterioration and loss of knee-related quality of life are substantial among adolescents. Current individualized (à la carte) surgical techniques demonstrate good outcomes in patients with open growth plates. Due to high recurrence rates and age itself being a risk factor, surgical treatment should be discussed

with patients and families in every single skeletally immature patient. The decision should be made respecting individual risk for instability, ongoing symptoms and/or osteochondral fragments and patient demands.

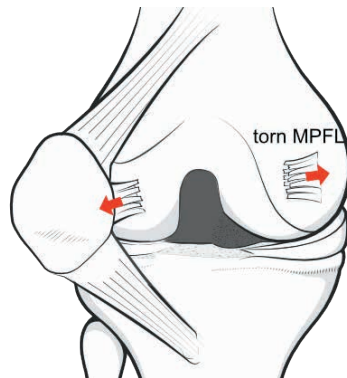
Grade C

Is there a role for medial patellofemoral ligament (MPFL)/medial patellotibial ligament (MPTL) repair vs. reconstruction in acute cases?

MPFL reconstruction has demonstrated clinical superiority compared to medial soft tissue repair techniques (MPFL/MPTL repair). When MPFL-surgery is indicated in FTPD, MPFL reconstruction is therefore the method of choice to address the medial soft tissue stabilizers.

Grade C

rupture of the medial patellofemoral ligament



Courtesy of KNEEGuru

When is isolated MPFL Reconstruction indicated in FTPD? Should a combined corrective surgery (MPFL + additional procedure) be considered in treating FTPD in the presence of (bony) anatomic abnormalities?

Despite the lack of clear scientific evidence in these questions, the consensus group supports isolated MPFL reconstruction in the absence of relevant bony risk factors and, vice versa, the correction of relevant bony risk factors in addition to MPFL reconstruction after FTPD. As it was shown for redislocations, untreated bony risk factors increase the risk of failure. For this reason, it is only consistent to correct relevant bony abnormalities at the earliest possible chance to avoid recurrence and revision surgery. The decision is always individual.

Grade D

Which FTPD patients need immediate surgery? When should delayed surgery be considered?

Even repairing a chondral or osteochondral lesion at the earliest possible timepoint is always preferable, a delayed refixation or repair also needs to be considered rather than fragment removal. The patient workup (esp. imaging) should be ideally done before this acute surgery to understand the risk factors and to have the option to add concomitant procedures if necessary. In the absence of repairable chondral or osteochondral injuries, immediate surgery is not necessary.

Grade D

Are there any differences between skeletal mature and immature patients in who should be treated for chondral or osteochondral fragments?

Refixation of chondral or osteochondral fragments should be the first line of treatment. In general, skeletal immaturity should not make any difference when treating chondral or osteochondral defects after FTPD but should have a lower threshold for repairing even smaller defects.

Grade D

How can malalignment and patellofemoral bony abnormalities be dealt with in open physes?

Open physes are chance and problem at the same time. Guided growth to correct coronal malalignment is a method with high potential that is much easier than osteotomy in adults and should be considered when necessary. Axial malalignment can be corrected without harming the physes. Therefore, this can be carefully considered with respect to the dynamic torsion values during growth. Other bony techniques addressing the tibial tubercle or the trochlear geometry are generally not recommended in wide open physes – specific paediatric techniques can be used in selected cases. There are soft tissue options to address patella alta or a lateralized tibial tubercle if needed. Trochleoplasty can be done safely close to skeletal maturity.

Grade C

OUTCOME

Is non operated FTPD a risk factor for ongoing symptoms?

In addition to recurrent instability, a variety of symptoms, such as pain, swelling and giving way, functional and psychological limitations, and reduction in sports participation, affect 50% of patients, reducing their quality of life. Cartilage lesions start in the first episode, and the severity of the damage correlates with the degree of persistent instability.

Grade C

Which PROMs should be used to assess outcomes after FTPD?

The most commonly used PROMS are the Kujala, IKDC, KOOS and Lysholm, which are not specific for patellar instability. The Banff Patellofemoral Instability Instrument 2.0 (BPII) and Norwich Patella Instability (NPI) outcome scores are new scores developed specifically for patients (incl. adolescence) troubled by patellar instability. BPII 2.0 has been thoroughly tested and found to be valid, reliable, and disease-specific. The consensus committee recommends including the BPII 2.0 and/or NPI scores as a minimum in future studies knowing that they are not validated for all languages.

Grade C

ACKNOWLEDGEMENTS

To all members of the rating group: Massimo Berruto (IT), Kristoffer Barfod (DK), David Dejour (FR), Marcin Domzalski (PL), Christian Egloff (CH), Jarosław Feluś (PL), Michael Iosifidis (GR), Paola Kappel (DE), Nikolaos Koukoulis (GR), Andy Metcalfe (UK), Danko Milinkovic (DE), Paulo Oliveira (PT), Xavier Pelfort López (ES), Anke Simone Rechter (DK), Vincente Sanchis Alfonso (ES), Elvire Servien (FR), Reha Tandogan (TR), Philippe Tscholl (CH), Gábor Vásárhelyi (HU), Adelio Vilaca (PT), Frederik Weitz (FI), Felix Zimmermann (DE)

We would also like to thank the peer reviewers from all over Europe for their contribution to this consensus.

Special thanks goes to Luca Tanel (IT) who helped organising the references.

Contact Information

ESSKA Office

Anna Hansen Rak

Project Manager

Phone: +352 4411 7026

Fax: +352 4411 7678

e-mail: info@esska.org

www.esska.org