

*tool***Vet**[®]

FlexiOss[®] Vet

BONE SUBSTITUTE BIOMATERIAL

Better being for pets

toolVet[®]

FlexiOss[®] Vet

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1. Market data



Veterinarian

The turn of the 20th and 21st centuries brought many changes to the veterinary profession – not only a division between large and small animals, but also specialisations similar to human medicine such as dermatology, oncology or orthopaedics.

The highly specialised nature of the veterinary industry encourages practitioners to participate in a great deal of training but also to reach out for innovative medical solutions from the human sector.

once

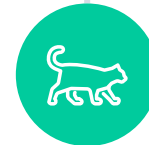
cows, horses, pigs, dogs, cats, chickens

veterinarian

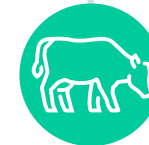
today



veterinarian



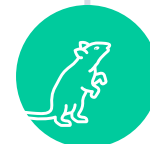
small animals



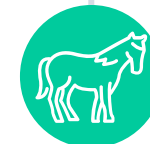
large animals



dogs and cats



rodents



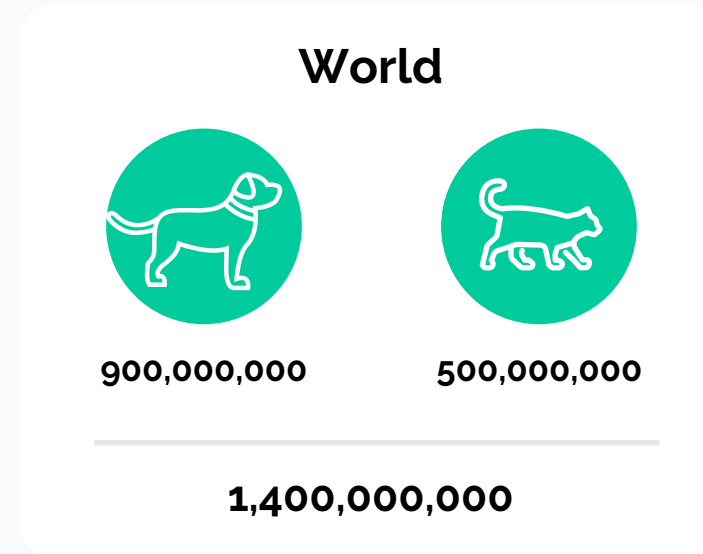
horses



pigs

dermatologist, oncologist,
orthopaedist,
ophthalmologist...

Population



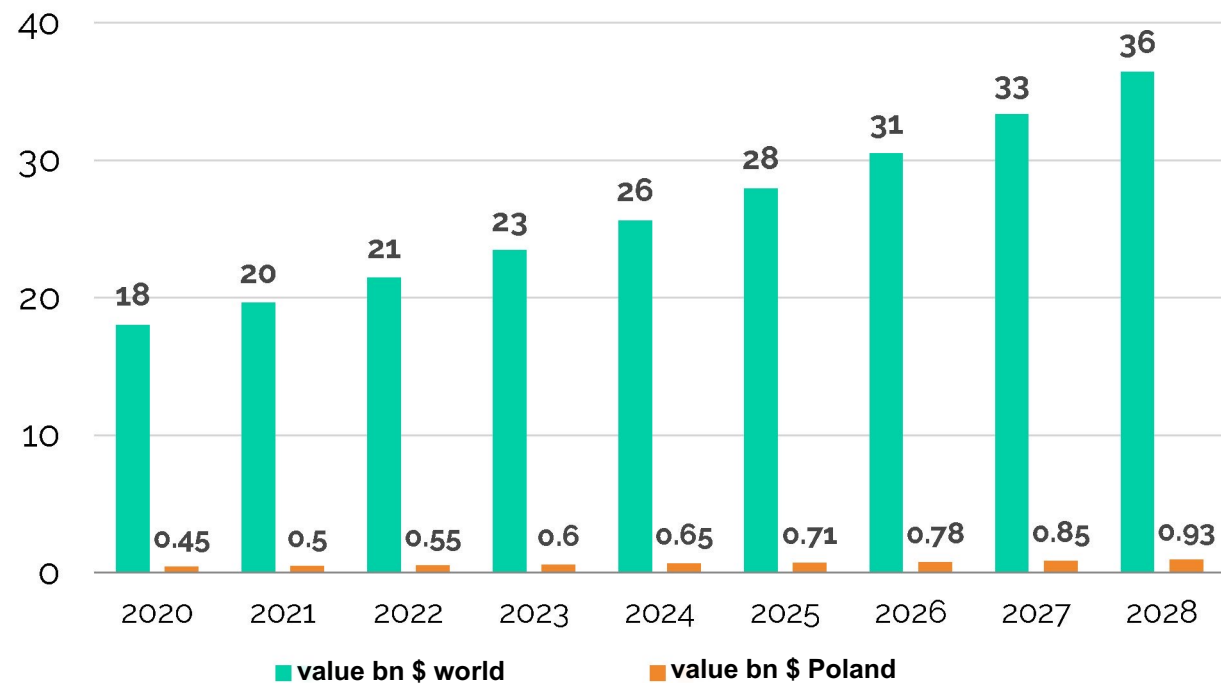
Average expenditure of \$ per year per animal	2020	2028
Poland	\$32	\$65
World	\$12	\$25

Value of the veterinary market

The global veterinary market is one of the most premiumized markets, with its value steadily growing.

Cultural changes, increased consumer awareness and a wealthier society are what makes us spend more and more on the health of our four-legged friends.

By 2028, the global veterinary market is estimated to grow at a compound annual growth rate (CAGR) of **9,2%**.

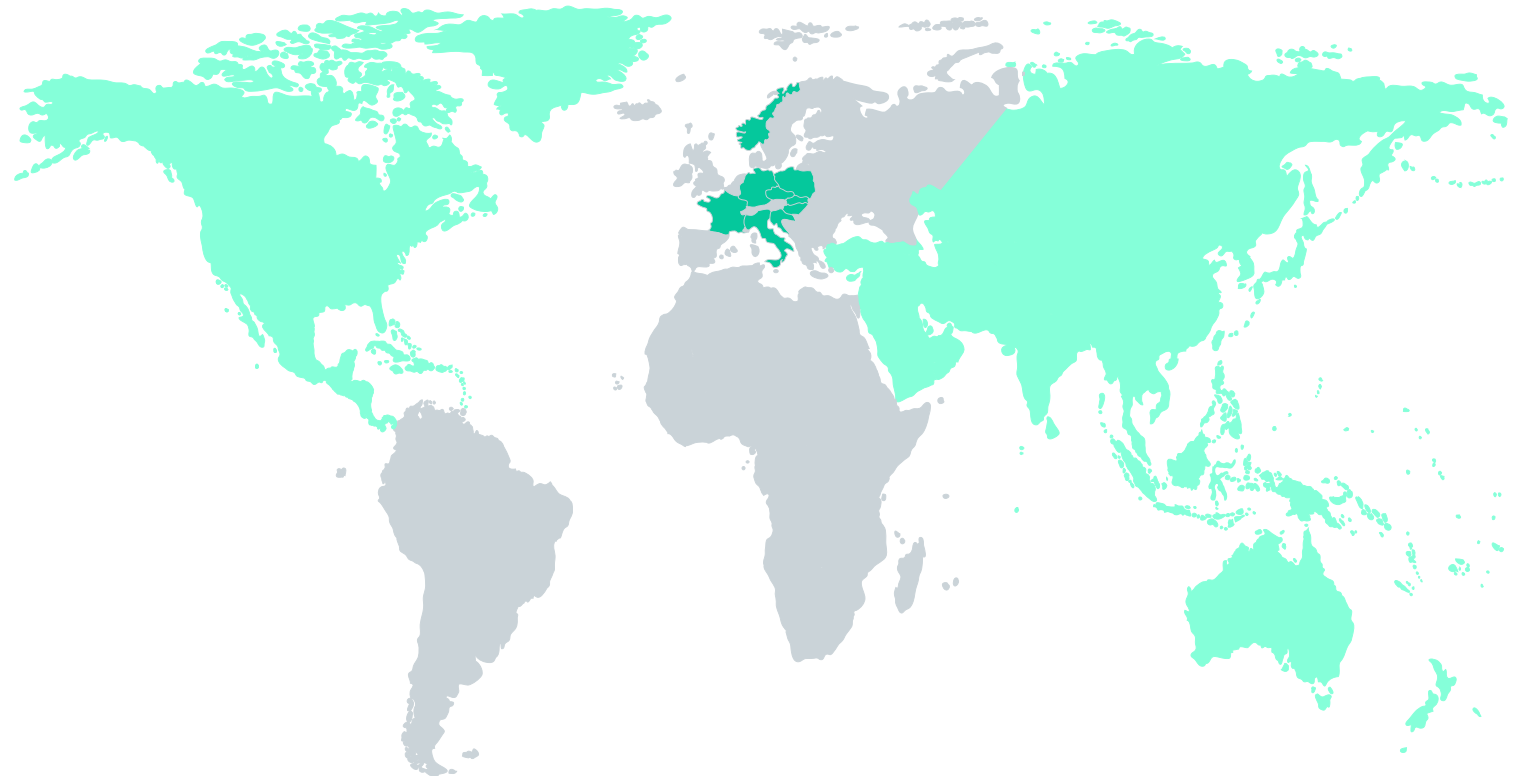


Current markets for FlexiOss® Vet

In 2023, in addition to the very dynamic development of the Polish veterinary market, FlexiOss® Vet began its expansion into foreign markets.

At the moment, the first sales have appeared in countries such as **Germany, Italy, Slovakia, Slovenia, Croatia, Hungary, the Czech Republic and Norway.**

Europe is not the only continent we are interested in. Through various relationships, we have been conducting discussions in Asia, Australia and North America.



■ current markets ■ Ongoing discussions

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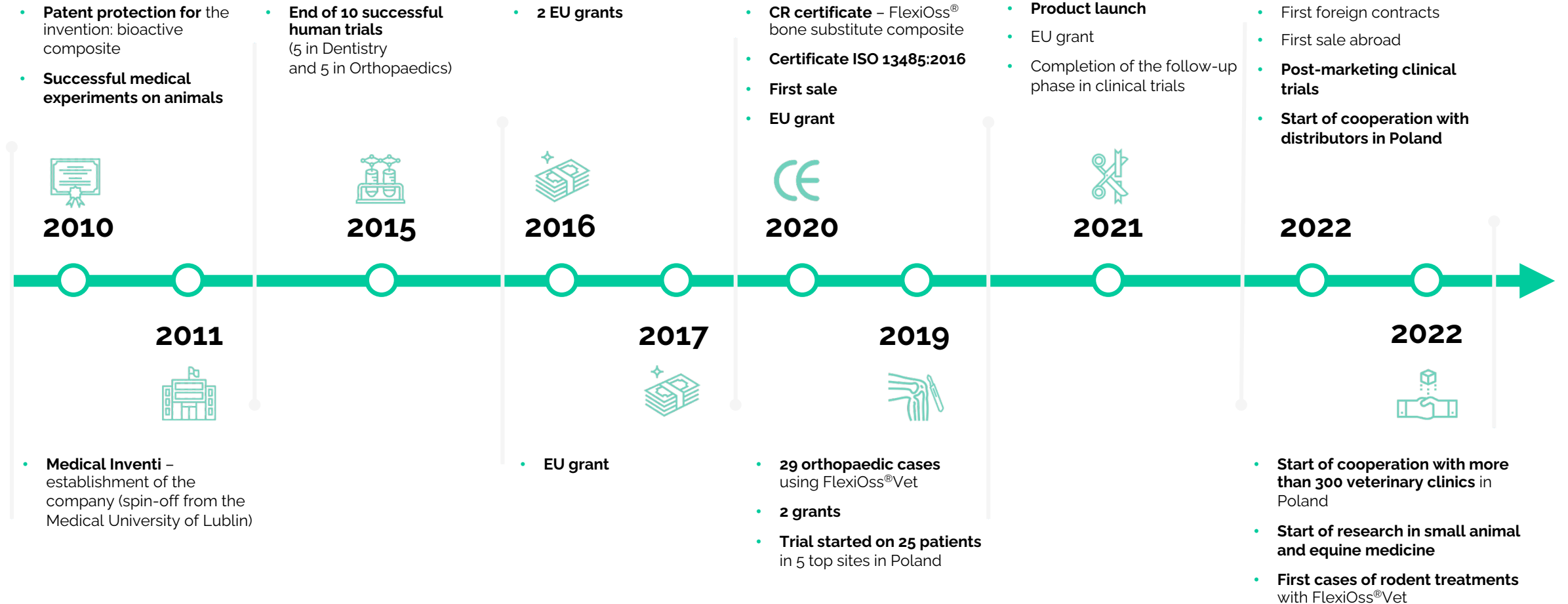
FlexiOss[®] Vet

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2. The beginning of FlexiOss[®] Vet

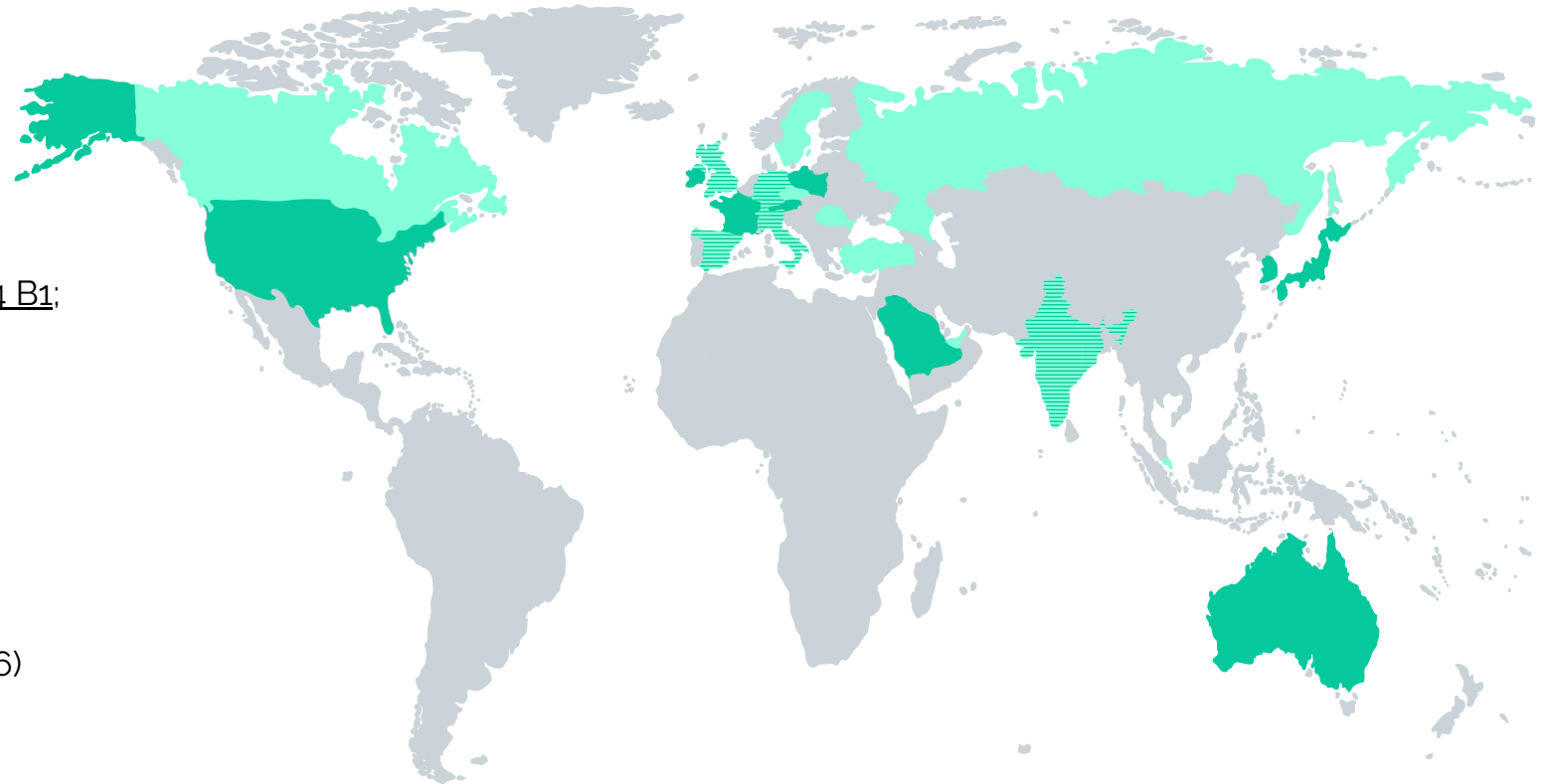


Story of the project



Patent protection

- **Protection of raw materials**
([PL 210026 B1](#))
- **Product protection**
([European patent no. 2421570 B1](#); [|PL 206394 B1](#);
[PL 212866 B1](#))
- **Protection of manufacturing methods**
([US patent No. 16/393,566](#); [PL No. P.428052](#);
[PCT/IB2019/060420](#), [JP No. 7138078](#))
- **EU trade mark FlexiOss** (no. ZTUE015761646)
- **WIPO trademark FlexiOss** (no. 1669414)
- **CNIPA trademark FlexiOss, FlexOss, 复适欧**
(No. TCN2023021751, TCN2023021752,
TCN2023021743)



Patent application

patent held

patent application + existing patent

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3. What is FlexiOss® Vet?



What is FlexiOss®Vet?

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FlexiOss®Vet

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Bone substitute biomaterial

FlexiOss®Vet is a state-of-the-art third-generation implant preparation: biphasic (hydroxyapatite-polymer), bioactive and promoting bone tissue regeneration.

FlexiOss®Vet absorbs fluids (e.g. blood, plasma, drug solutions). This enables it to act as a carrier of biological substances, especially antimicrobial drugs, allowing it to reduce the systemic use of antibiotics in the perioperative period. In addition, the material has a haemostatic effect during implantation, which greatly facilitates the implantation procedure.



What is FlexiOss® Vet?



FlexiOss® Vet
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Innovative material



The innovation of combining the two components into a composite lies in transforming curdlan into a triple helix structure – a conformation that does not stimulate pro-inflammatory processes and allows trapping of hydroxyapatite granules.

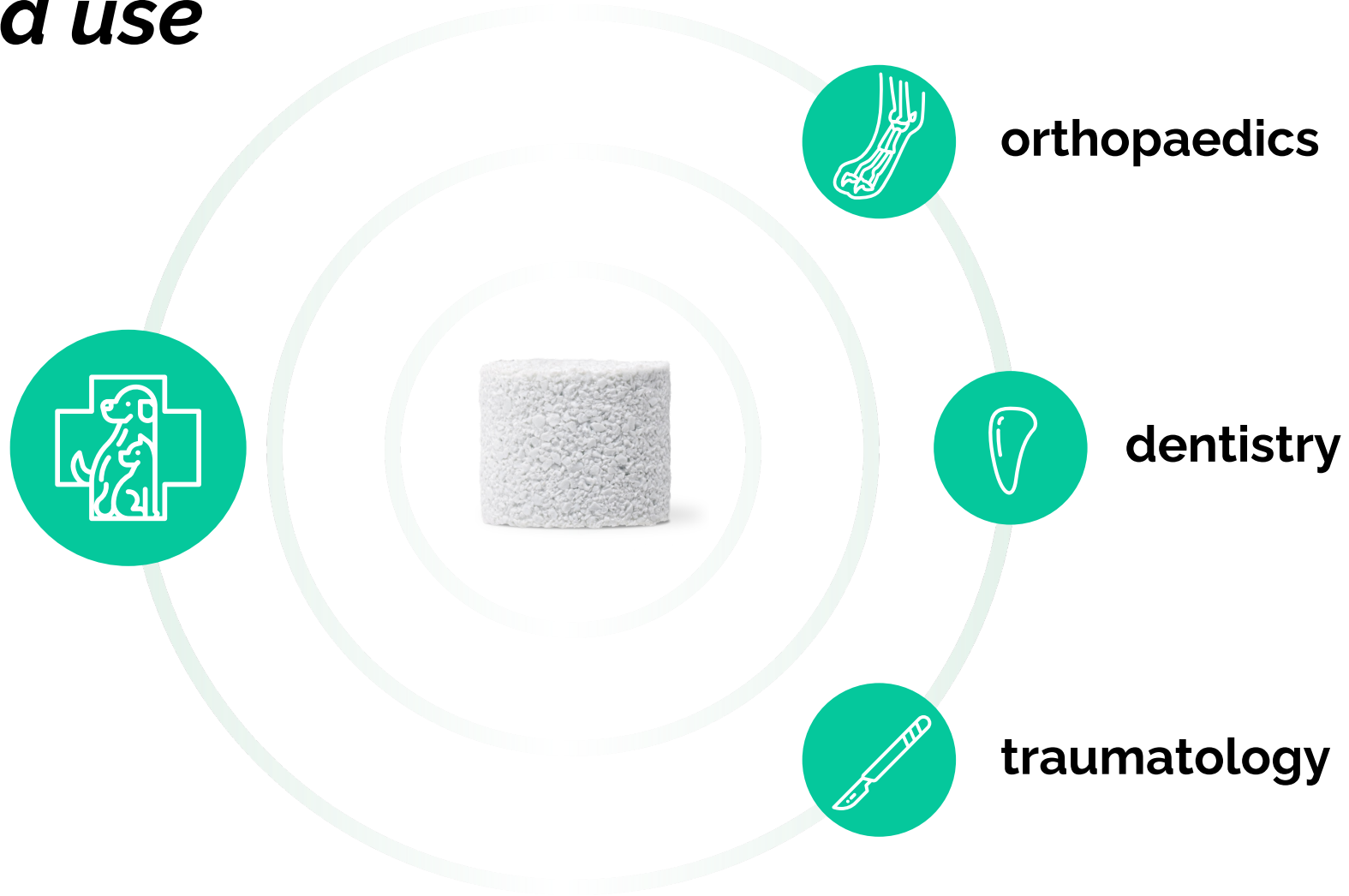
Once implanted, **FlexiOss® Vet** integrates into the patient's bone and gives the effect of the patient's own bone formation. This eliminates the need for another operation to remove the implant, which spares the animal additional stress and pain.

What is FlexiOss® Vet?

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FlexiOss® Vet
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Intended use



What is FlexiOss® Vet?

Orthopaedic case

Krzysztof Zdeb, DVM – LEGWET – Legionowo

Species: dog

Breed: Dachshund

Sex: male

Age: 12 months, completed somatic growth

DIAGNOSIS

- angular deformity of both tibias. Pes Varus, bilaterally
- open-angle tibial osteotomy in two stages

TREATMENT

Osteotomy of the right tibia with distraction according to the open angle technique. Stabilisation with a 2.4 mm titanium locking bridge plate.

After 4 weeks, left tibial osteotomy carried out according to the procedure previously used on the right limb. FlexiOss® Vet soaked in PRP from the patient's own blood drawn before surgery was inserted into the osteotomy fissure.

TREATMENT RESULTS

A rapid recovery was observed after both osteotomies. The patient gradually started to bear weight on the operated limb. The way of moving changed, hopping was becoming less frequent.

On the day of osteotomy of the other side (left side), follow-up radiographs of the right side were performed (4 weeks after osteotomy). Progressive healing of the right tibia was noted, but the osteotomy fissure was still visible.

After further 4 weeks, the patient was moving very well at the follow-up visit, bearing weight on both pelvic limbs. There has been a complete change in the way the patient moved – from hopping to alternate walking.

In the follow-up X-ray of the left tibia, the osteotomy fissure filled fully with young bone scar. In the right tibial follow-up X-ray, the osteotomy fissure filled with bone scar.

CONCLUSIONS

Implantation of FlexiOss® Vet with PRP into the osteotomy fissure accelerated the filling of the defect with bone scar, ensuring healing at 4 weeks postoperatively compared to the contralateral limb, where a similar radiological image was obtained at 8 weeks postoperatively.



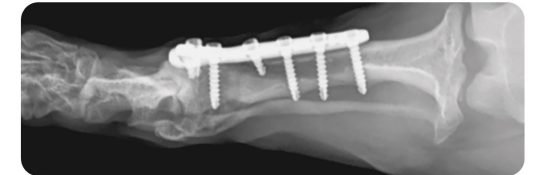
Radiological image of the right tibia after osteotomy.



Radiological image of the left limb after osteotomy with FlexiOss® Vet and PRP restoration.



Radiological image of the left pelvic limb 4 weeks after osteotomy.



Radiological image of the right pelvic limb 8 weeks after osteotomy (4 weeks after osteotomy of the left limb).

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Dental case

Species: dog

Breed: crossbreed

General health of the animal:

Sex: male

Age: 10 years

good, no additional diseases

DIAGNOSIS

Stage IV stomatitis, severely advanced periodontal disease. Pathological pockets greater than 3 mm, multiple periapical lesions, maxillary osteitis with vertical and horizontal bone recession, vertical gingival recession, exposed tooth roots, exposed furcation, purulent discharge from pathological pockets. Indication for extraction of almost all maxillary teeth.

TREATMENT

The teeth were extracted, the alveoli were lysed and FlexiOss® Vet was inserted into the alveolar sacks on the right side, then closed tightly with a mucosal flap. The teeth on the left side were protected by inserting a collagen sponge.

TREATMENT RESULTS

After 21 days, the alveolar sacks on the right side show features of bone tissue and bone remodelling without alveolar process bone atrophy. On the left side, there are no visible radiographic features of bone tissue, raising the suspicion that the alveolar sack has been filled with granulation tissue.

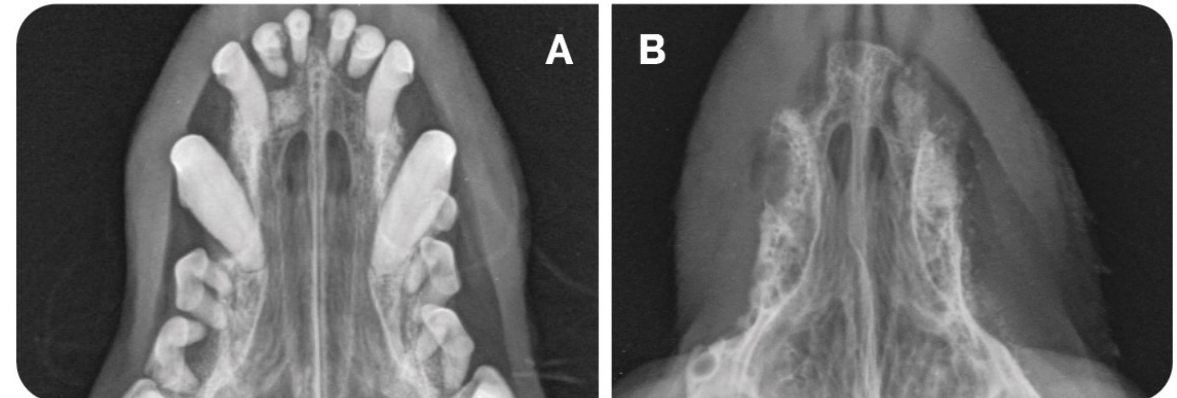


Photo before surgery [A] and 3 weeks after surgery [B].

What is FlexiOss® Vet?

Case – horse

Species: horse

Breed: pure Arabian blood

General health of the animal:

Sex: male

Age: 24 years

moderate, concomitant disease
(PPID syndrome) – in treatment

DIAGNOSIS

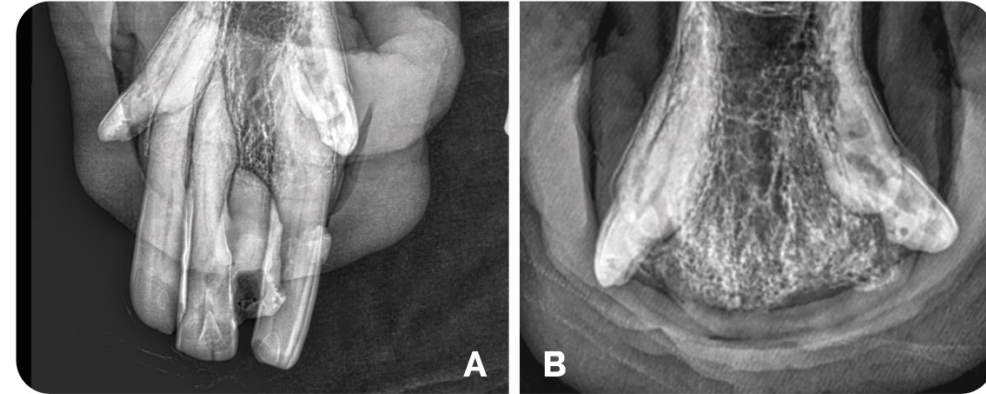
- advanced EOTRH syndrome in the upper and lower incisors
- periodontitis around teeth 309, 310

TREATMENT

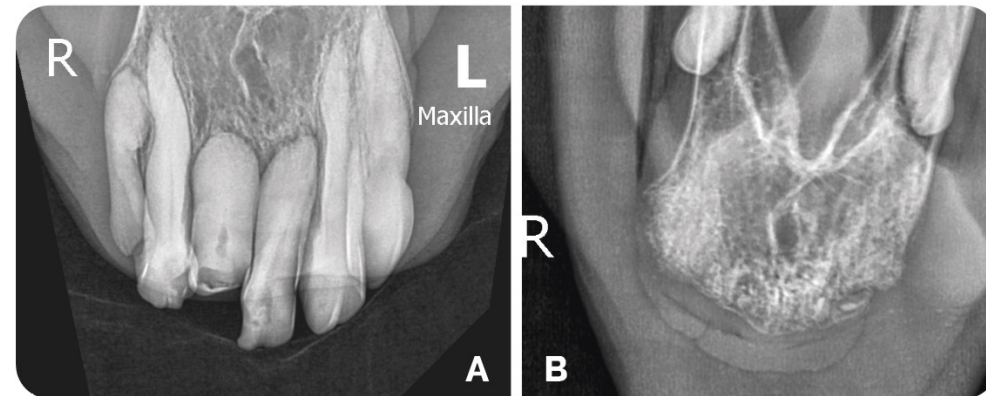
Treatment involved the removal of all incisors and the teeth 309 and 310 with periapical infection. FlexiOss® Vet hydroxyapatite material soaked in gentamicin was inserted into the empty alveolar sacks and, in the case of the incisors, the alveolar sacks were additionally filled with haemostatic sponges and sutured.

The antibiotic therapy was local (gentamicin). The horse received flunixin for 3 days, followed by oral phenylbutazone twice daily for 7 days.

The therapy for PPID syndrome with Pergoquin was continued during the stay.



Mandibula before surgery [A] and 3 months after surgery [B].



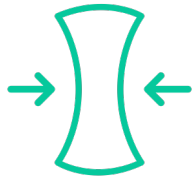
Maxilla before surgery [A] and 3 months after surgery [B].

What is FlexiOss® Vet?



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Features



flexible and bendable



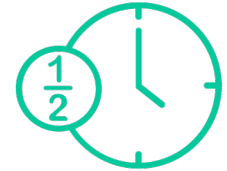
biocompatible with natural bone tissue



mechanical parameters similar to natural bone tissue



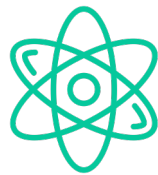
antibiotic carrier



reduction in bone healing time by half*



material of non-animal origin



ion reactive / bioactive



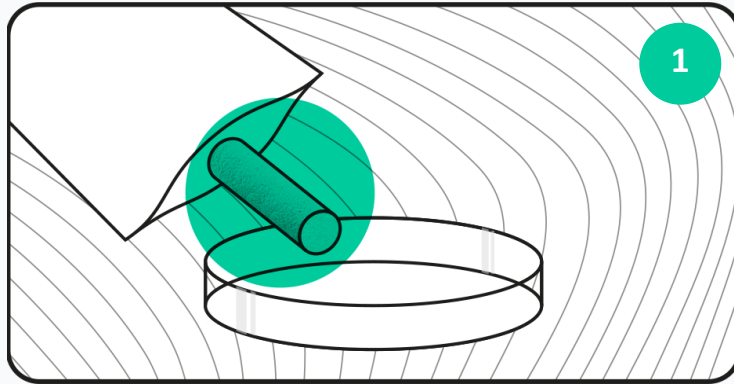
non-toxic



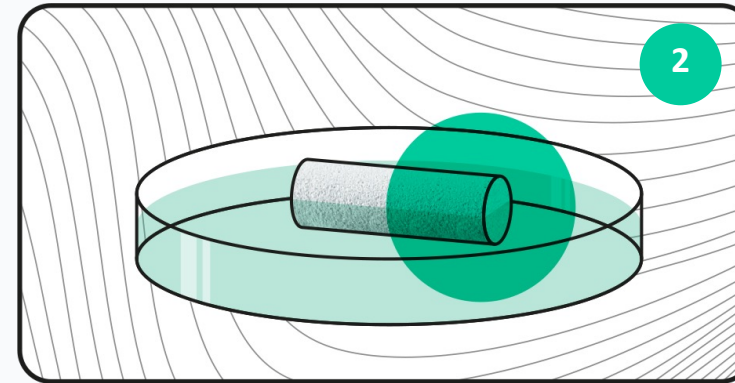
easy to carry and store

*in relation to the standard healing time of 56 days.

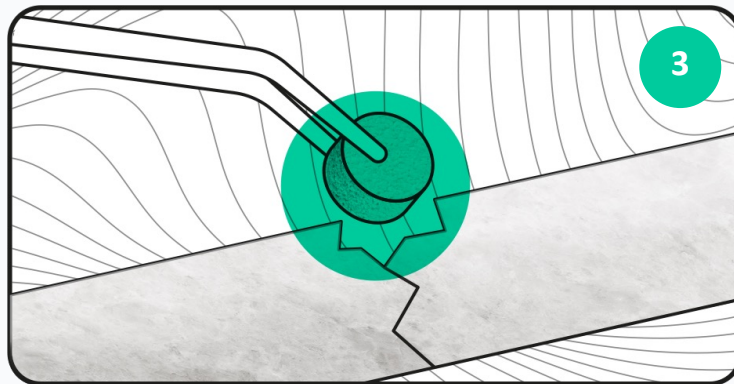
Implantation scheme



1 Extraction of the sterile product from the packaging into a vessel.

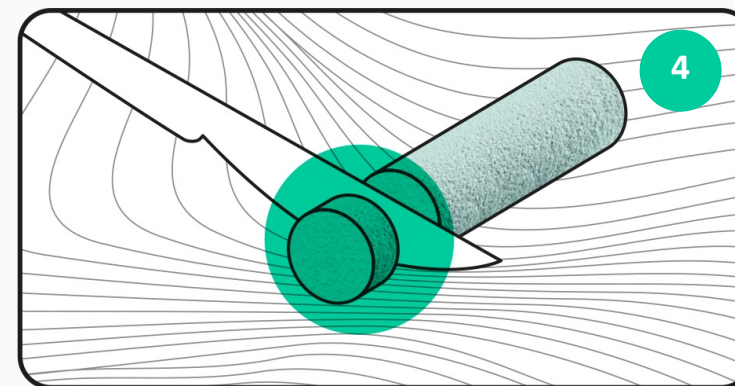


2 Soaking of FlexiOss® Vet in NaCl solution, antibiotic or patient's blood.



3 Matching the shape of the composite to the bone defect by trimming with a scalpel.

Remember! The preparation increases in volume by approximately 30% after soaking.



4 Implantation.

Range and specification

	FlexiOss® Vet 2 mm	FlexiOss® Vet 5 mm	FlexiOss® Vet 10 mm	FlexiOss® Vet 30 mm	FlexiOss® Vet 50 mm
package contents (pieces)	3 or 7	3 or 7	1 or 3	1 or 3	1 or 3
EAN	5904326324107 (3 pcs) 5904326324121 (7 pcs)	5904326324138 (3 pcs) 5904326324152 (7 pcs)	5904326324022 (1 pcs) 5904326324039 (3 pcs)	5904326324046 (1 pcs) 5904326324053 (3 pcs)	5904326324060 (1 pcs) 5904326324077 (3 pcs)
dimensions (wet state)	L=2 mm ±1 mm Ø 13 mm to Ø 0.5 mm	L=5 mm ±1 mm Ø 13 mm to Ø 0.5 mm	L=10 mm Ø 13 mm	L=30 mm Ø 13 mm	L=50 mm Ø 13 mm
weight (dry state)	0.16 g ±0.02 g	0.42 g ±0.4 g	0.89 g ±0.1 g	2.49 g ±0.2 g	4.18 g ±0.35 g
geometry	roller/cylinder	roller/cylinder	roller/cylinder	roller/cylinder	roller/cylinder

What is FlexiOss® Vet?



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Available packages



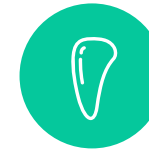
START PACKAGE

FlexiOss® Vet 2 mm x 1 pc.
FlexiOss® Vet 5 mm x 1 pc.
FlexiOss® Vet 10 mm x 1 pc.



ORTHOPAEDIC PACKAGE

FlexiOss® Vet 10 mm x 1 pc.
FlexiOss® Vet 30 mm x 1 pc.



DENTAL PACKAGE

FlexiOss® Vet 2 mm x 3 pc.
FlexiOss® Vet 5 mm x 3 pc.
FlexiOss® Vet 10 mm x 1 pc.

Thank you for your attention

Contact

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Export Sales

Agata Bednarz - Jackowska

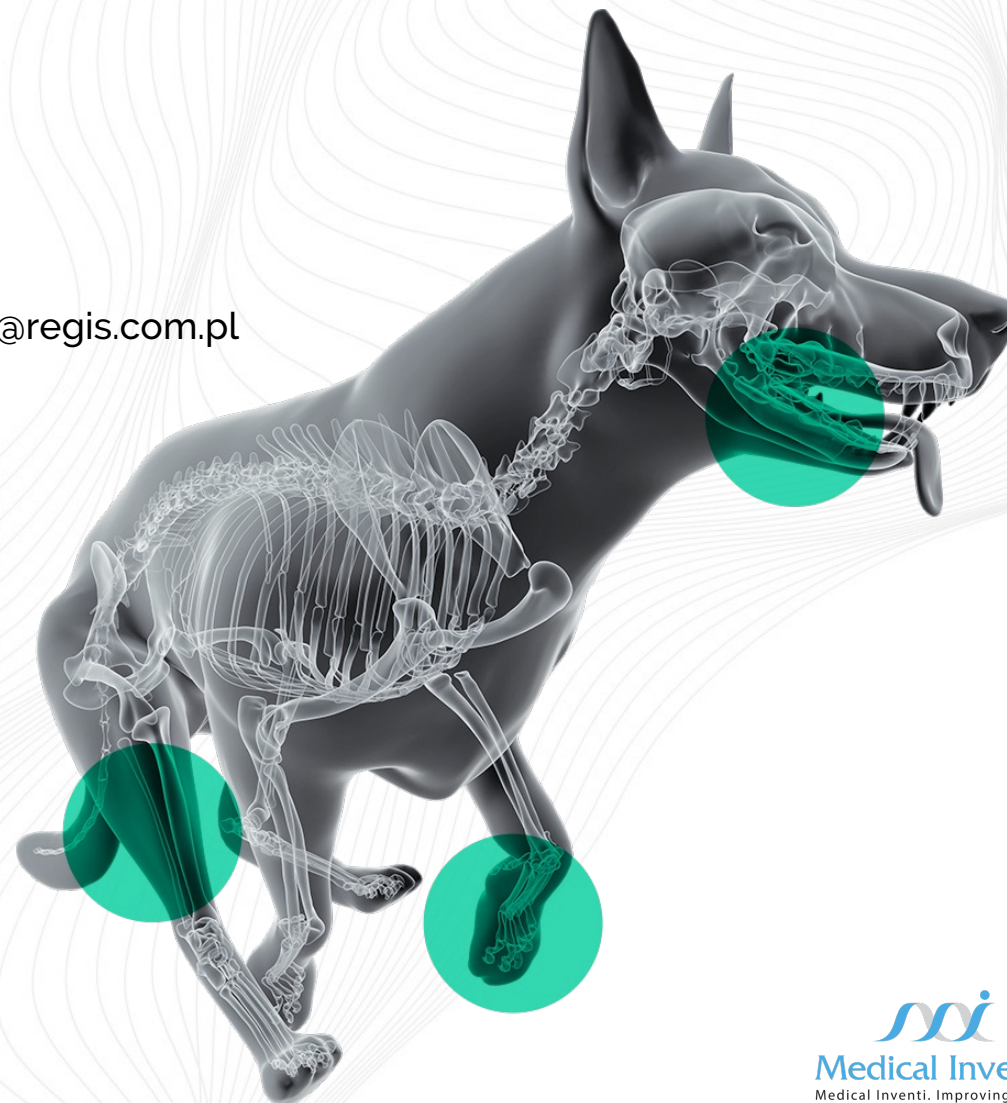
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