



MCG

A digital solution for remote monitoring
of chronic motion conditions

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MCG*fast-doc*: More Trust In Fast-track TJA Procedures

€ 50 billion – annual healthcare cost of Total Joint Arthroplasty (TJA) in EU and US

	EU	USA
Inpatient TJA	€ 15,000	€ 28,000
Outpatient TJA	€ 8,000	€ 19,000

2,700,000

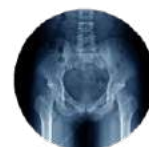
Total Joint Arthroplasty (TJA)
in EU and US in 2017



Knee
2010 vs. 2017

+17%
operations

+6%
average price



Hip
2010 vs. 2017

+33%
operations

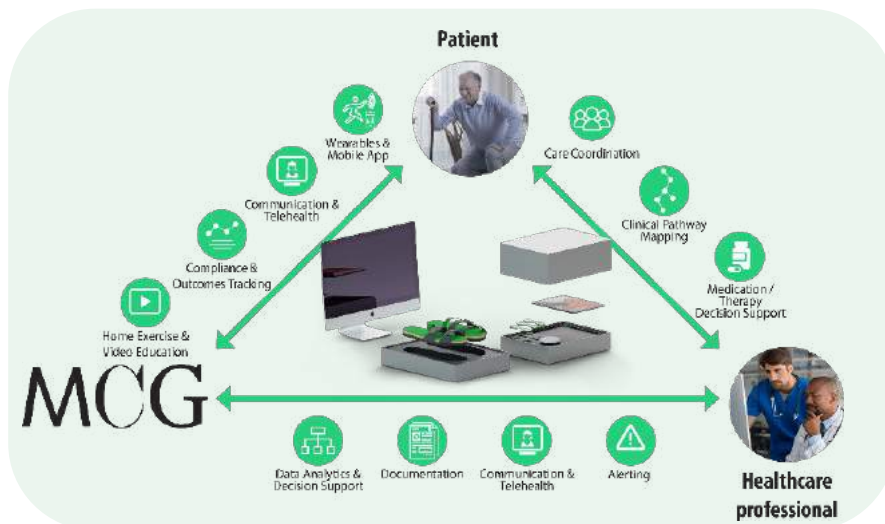
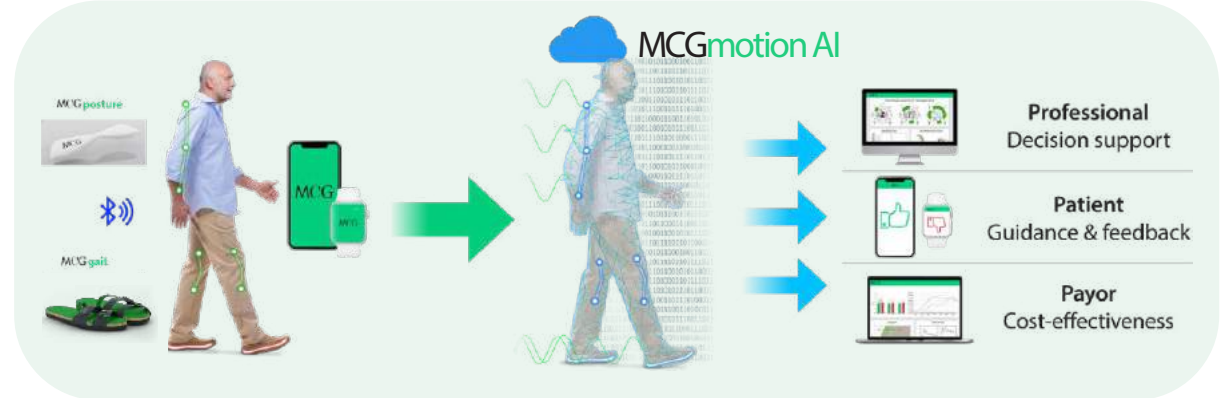
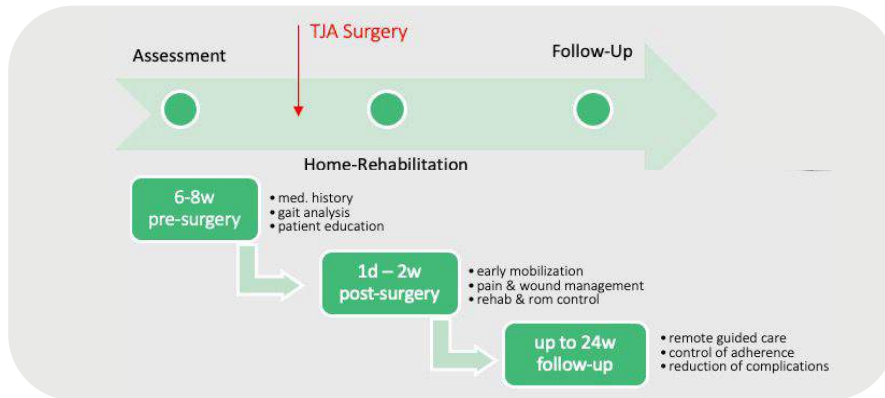
+5%
average price

PAIN POINTS

- Unsustainable cost of inpatient TJA
- Low outpatient utilization rate ~10%
- Lack of trust in fast track TJA
- Suboptimal quality assurance of the outpatient TJA and home rehab for clinicians

SOLUTION

MCG*fast-doc* Reduces Costs By Promotion Utilization Of Outpatient TJA MCG



SOLUTION

Reducing costly inpatient hospital stay.

- Establishing a direct, digital communication between patient and healthcare professional
- Delivering digital support to patients and clinicians

BENEFITS

- Increase outpatient utilization rate to **>60%** -> cost-reduction per patient of € 5,000 in EU and € 8,000 in US

MCG*care* – The Vision

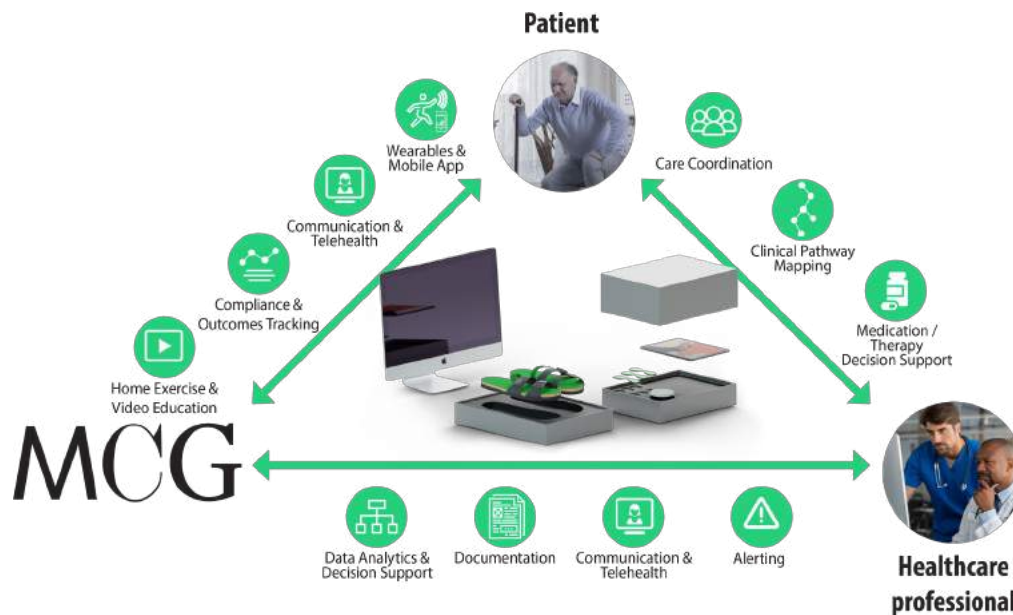
We envision modern health care being more than a video chat
between a care provider and a patient

We envision access to patient's objective and subjective real-life data as needed
for care without hassle and unnecessary burden, in a secure format

We envision a turn-key digital care concept consisting of

- i.) a digital therapy plan
- ii.) functional remote outcomes measures and vital signs control
- iii.) patient-reported outcomes measures
- iv.) embedded in a tele-health communication and alerting environment

MCGcare



- ✓ Physician/therapist provides care - defines therapy and monitors progress
- ✓ Patient can focus on his health - follows therapy- and exercise plan from home
- ✓ MCG enables the therapy path – through wearables, ML/AI analytics, outcomes tracking and communication tools

Turn-key Solution For Remote Clinical Grade Performance Based Outcomes Monitoring

Health Care Professional

- AI/ML based decision support environment
- Therapy plan builder
- Therapy monitoring
- Disease content libraries:
Functional outcomes tests, PROMs, video exercise, multi-modal treatment, educational
- Telemed tools



Patient

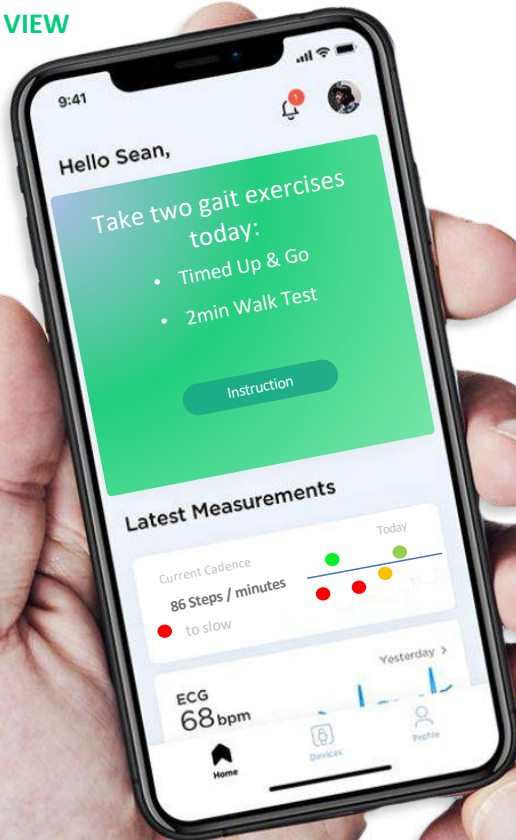
- Wearable sensors
- Functional outcomes tests
- PROMs
- Therapy plan and patient diary
- Alerting
- Video exercises and manual
- Telemed tools
- iPad

Sensors & Standardized Outcomes Measures

- ✓ MCG clinical grade wearable motion sensors MCG^{gait} & MCG^{rom}
- ✓ Optional: OEM best-in-breed app-based IoT wearables
- ✓ Clinical grade standardized outcomes tests
- ✓ Selected Patient Reported Outcomes (PROMs)



ANALYTICS AND VIEW

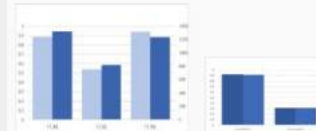


Moderne kontinuierliche Ganganalyse

Die von den Sensoren gesammelten präzisen Daten werden mit exklusiven Algorithmen verarbeitet, die von einem Jahrzehnt Erfahrung im Bereich der vernetzten Gesundheit profitieren.

Gang Metriken

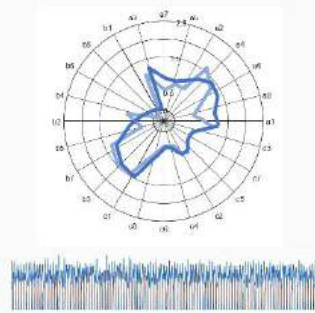
Selected distance [m]	161.6626
Starting time	00:03:45.300
End time	00:05:23.100
Time of selection	00:01:37.800
Analyzed steps	157
Mean speed [m/s]	1.8411
Cadence (steps/min)	96
Gait pattern	Walking Pattern



	Left(heel)	Left(toe)	Right(heel)	Right(toe)
Time of contact [s]	0.9200	0.0500	0.7500	0.0200
Swing time [s]	0.3100	0.0500	0.4400	0.0100
F1 [Hz]	5354	288	4836	512
Time of F1 [s]	0.3300	0.0500	0.2900	0.0000
F2 [Hz]	4408	405	4051	1095
Time of F2 [s]	0.6700	0.0500	0.3900	0.1300
F3 [Hz]	9211	287	5742	1423
Time of F3 [s]	0.6500	0.0200	0.5000	0.1000

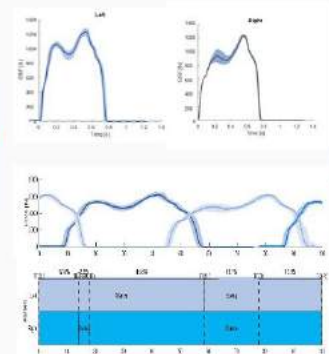
Gang Klassifizierung

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MEHR LESEN

Mittleres Gangmuster und Gangphasen



HR16

MCG IoT wearables

Clinical Grade Motion Analysis: MCG^{gait} + MCG^{rom}



MCG



MCG^{gait}* - Functional Outcomes Remote Measures

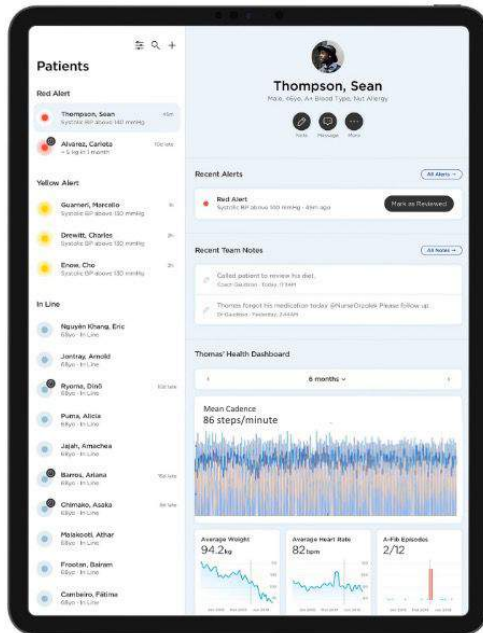


- 2min Walk Test, 6 min Walk Test (2MWT, 6MWT)
- 10m Walk Test (10mWT)
- 1 min Sit to Stand Test (1mSTST)
- 12 step Stair Climb Test (12SCT)
- Timed Up & Go (TUG)
- Instructions
- Automated analyses
- High speed secure data transfer
- For standardized test & exercises



* We are certified according to ISO EN DIN 13485

Outcomes And Compliance Tracking



- ✓ Remote functional outcomes tests and PROMS according to therapy plan
- ✓ For patient:
 - Follow treatment plan, stay motivated and informed.
 - Actionable, individualized insights
- ✓ For provider:
 - Quickly see an overview of all patients currently under care
 - Validated outcomes and novel real-world biomarker qualification
 - All data are securely recorded, evaluated and documented

Thank you !



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