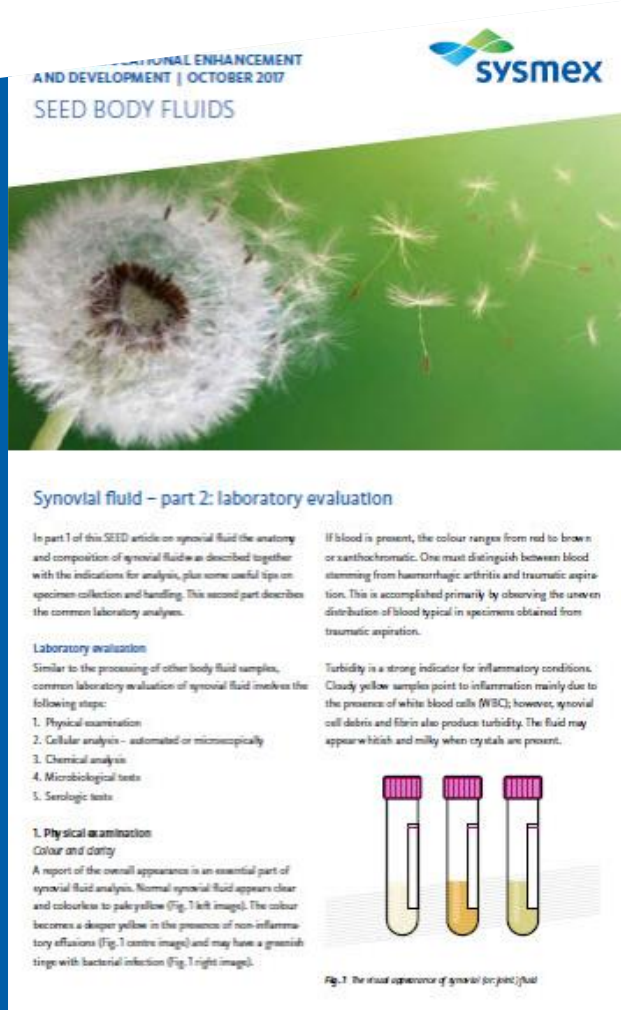
sysmex

Working at Sysmex Europe

Medical / Scientific Writing



...TIONAL ENHANCEMENT
AND DEVELOPMENT | OCTOBER 2017

SEED BODY FLUIDS

Synovial fluid – part 2: laboratory evaluation

In part 1 of this SEED article on synovial fluid the anatomy and composition of synovial fluid was described together with the indications for analysis, plus some useful tips on specimen collection and handling. This second part describes the common laboratory analyses.

Laboratory evaluation

Similar to the processing of other body fluid samples, common laboratory evaluation of synovial fluid involves the following steps:

1. Physical examination
2. Cellular analysis – automated or microscopically
3. Chemical analysis
4. Microbiological tests
5. Serologic tests

1. Physical examination

Colour and clarity

A report of the overall appearance is an essential part of synovial fluid analysis. Normal synovial fluid appears clear and colourless to pale yellow (Fig. 1 left image). The colour becomes a deeper yellow in the presence of non-inflammatory effusions (Fig. 1 centre image) and may have a greenish tinge with bacterial infection (Fig. 1 right image).

If blood is present, the colour ranges from red to brown or xanthochromatic. One must distinguish between blood stemming from haemorrhagic arthritis and traumatic aspiration. This is accomplished primarily by observing the uneven distribution of blood typical in specimens obtained from traumatic aspiration.

Turbidity is a strong indicator for inflammatory conditions. Cloudy yellow samples point to inflammation mainly due to the presence of white blood cells (WBC); however, synovial cell debris and fibrin also produce turbidity. The fluid may appear whitish and milky when crystals are present.

Fig. 1 The visual appearance of synovial (or joint) fluid

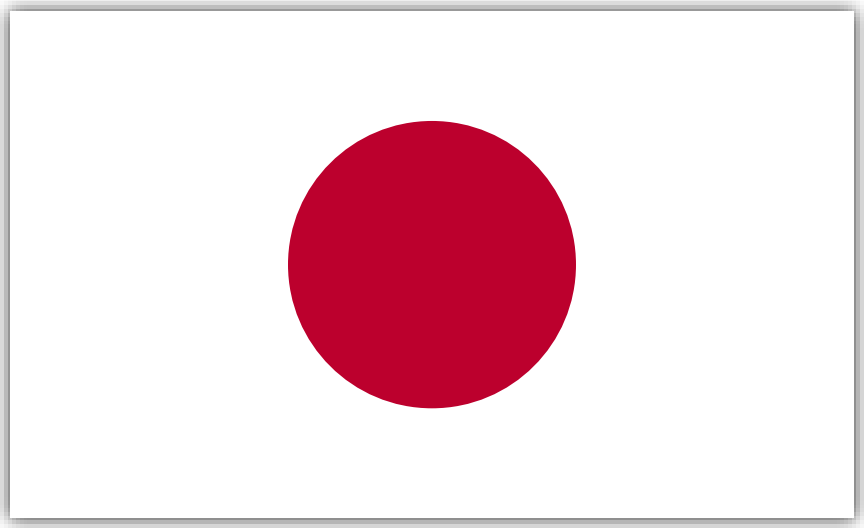
30.11.2017 • LSR Aktionstag für Berufe • Jens Behrens • Düsseldorf

Agenda

01 Wer ist Sysmex?

02 Der Medical Writer

03 HR Developmemt Programm



Kobe

Around 8,000 Employees as of 2017

GLOBAL INTEGRATED NETWORK
of Marketing, Sales, Production and R&D

ONE OF THE **LEADING IVD COMPANIES** WORLDWIDE

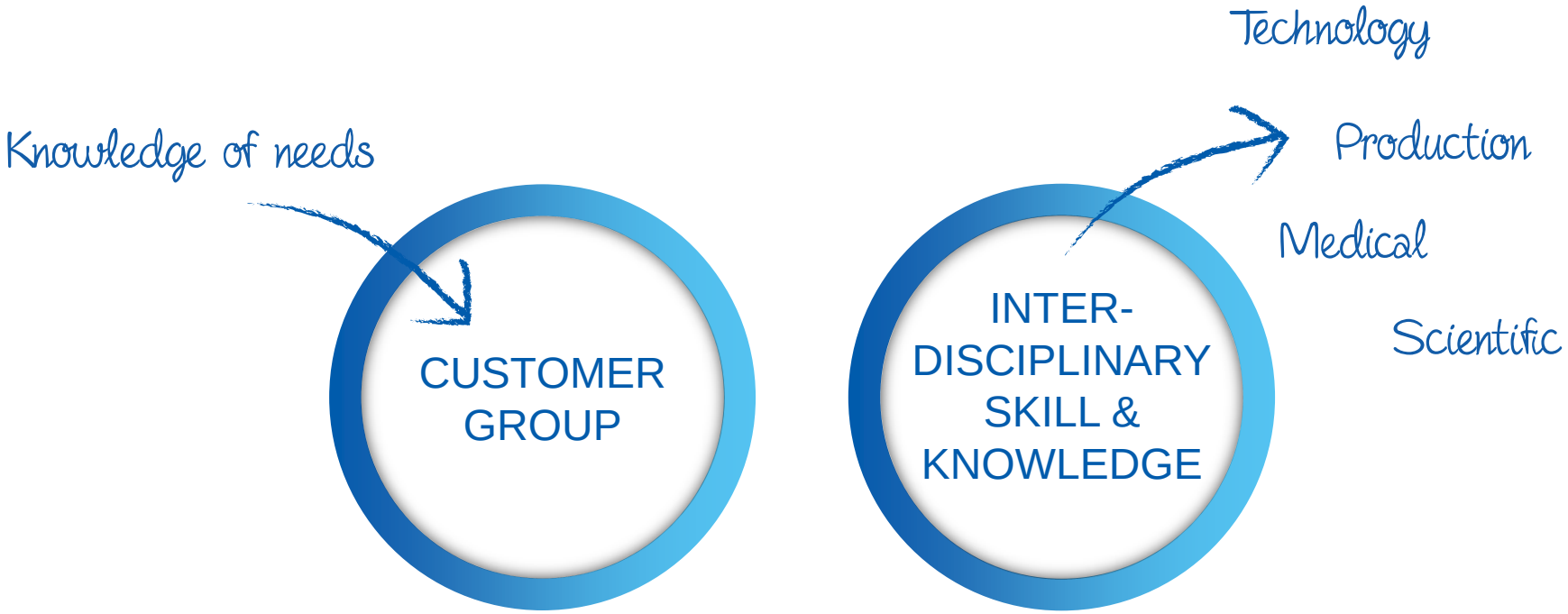
HAMBURG, GERMANY

The Sysmex Way

The Sysmex Way is the basis of all our activity.
It defines our relationship to the world, and our aims and ambitions.

The foundation of the Sysmex Way is our mission statement:
‘SHAPING THE ADVANCEMENT OF HEALTHCARE’.

How do we create our unique solutions?



How do we create our unique solutions?

Skills in Technology and R&D

Skills in Production

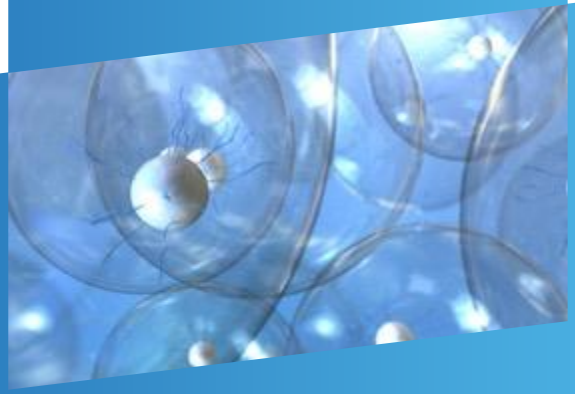
Scientific Knowledge

Medical Knowledge

Knowledge transfer

Research studies
(scientific marketing)

Acquisitions to supplement existing knowledge and fill gaps where market needs arise
(Sysmex Partec, Sysmex Inostics)



Knowledge transfer
(Academy, symposia, SEED)

To Help our Customers and the Other Stakeholders Further,
we Also Share and Disseminate the Knowledge we Develop Actively

Cluster Focus

Central clinical lab

General physician's office

Intelligent Lab Automation

Cancer management

Industry

Research

Essential Healthcare

Pharma industry

80% OF MEDICAL DECISIONS are based on Diagnostics. We Understand and Specifically Address Each Target Group.

Mein Werdegang

Wie alles begann …

Heinz Sielmann

Bernhard Grzimek

Time Life

GEO

Klare Entscheidung …BIO!

- Biologie ist die Grunddisziplin der **"Life Sciences"** und gilt als **Leitwissenschaft des 21. Jahrhunderts.** Sie beschäftigt sich mit den komplexen Phänomenen des Lebens.
- Die Forschungsergebnisse tragen zu einem besseren **Verständnis fundamentaler Prozesse** bei.

Universität Hohenheim

Am Anfang war …

… der Pharmareferent [DHU]	… & der wissenschaftliche Aussendienstmitarbeiter [dianova GmbH]

Raus aus dem Auto, rein ins Büro …

… der Produktmanager [dianova GmbH]

… der Verkaufsförderer [Eppendorf AG]

… der Leiter Elektronische Kommunikation [Eppendorf AG]

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A recent study [5] showed that the XN-Series has a superior sensitivity for blasts and abnormal lymphocytes in a large inter-instrument comparison of pathological flags in 549 samples taken randomly from routine analysis (Table 1). Another recent study [6] found very good performance of the XN-Series in detecting leucocytosis of neoplastic and reactive origin (Table 2). The authors concluded that the XN-Series analyser has a sensitivity and specificity similar to morphological slide review.

Table 1 Sensitivity, specificity, positive and negative predictive value for flagging pathological samples on the different analysers, using 549 samples taken randomly from routine analysis. Adapted from Briuege et al. [5].

Reference based on microscopy	N	Analyser	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
Blasts ("Blasts?" flag)	54	Sapphire	76	95	55	97
		DxH 800	74	95	63	97
		Advia 2120i	65	97	65	97
		XE-5000	65	98	79	96
		XN-2000	**97**	**96**	**70**	**100**
Lymphoma cells ("Atyp Lymphs?" flag)	25	Sapphire	56	94	44	96
		DxH 800	64	94	47	97
		Advia 2120i	72	88	31	98
		XE-5000	80	95	54	99
		XN-2000	**80**	**99**	**59**	**98**
Neoplastic cells ("Blasts?" and/or "Atyp Lymphs?" flags)	57	Sapphire	74	95	72	95
		DxH 800	81	95	75	96
		Advia 2120i	77	94	71	96
		XE-5000	75	96	80	95
		XN-2000	**96**	**94**	**75**	**99**

Table 2 Performance of the XN-Series for detecting white blood cells of reactive and neoplastic origin. Adapted from Schuff-Werner et al. [6].

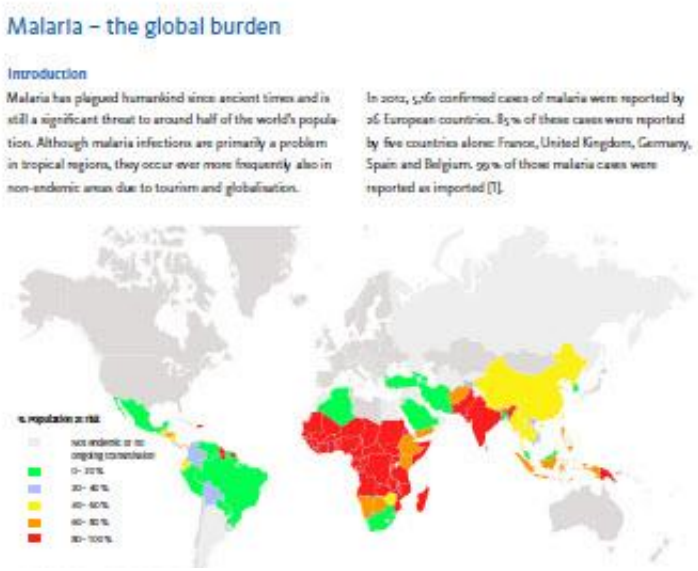
Reference based on microscopy, immunophenotyping and clinical diagnosis	N	Analyser	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)
Blasts ("Blasts?" flag)	30	Morphology	93	99	90	99
		XE-2100	90	39	37	97
		XN-2000	**93**	**96**	**74**	**99**
Lymphoma cells ("Atyp Lymphs?" flag)	18	Morphology	89	99	89	99
		XE-2100	78	62	34	97
		XN-2000	**89**	**97**	**70**	**99**
Neoplastic cells ("Blasts?" and/or "Atyp Lymphs?" flags)	48	Morphology	92	98	92	98
		XE-2100	85	41	25	92
		XN-2000	**94**	**93**	**75**	**99**
Reactive lymphocytes ("Atypical Lymphs?" flag)	35	Morphology	91	100	97	100
		XE-2100	63	77	31	96
		XN-2000	**86**	**98**	**86**	**99**

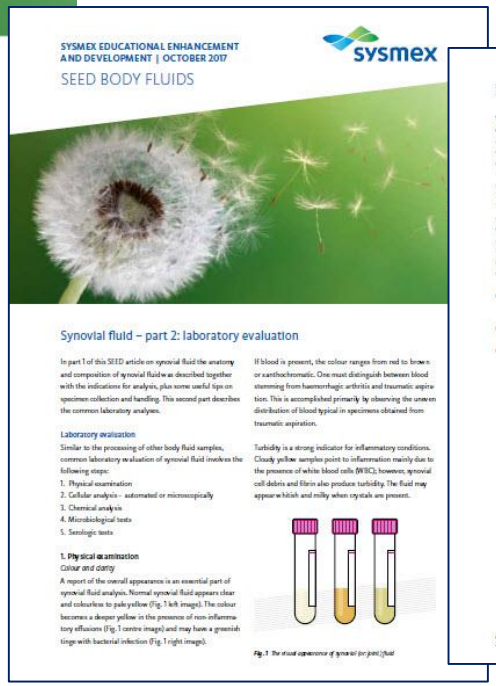
From Wikipedia, the free encyclopedia

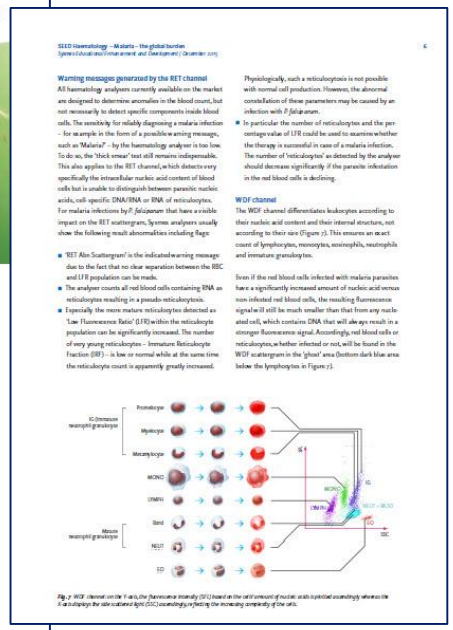
A **medical writer**, working with doctors, scientists, and other subject matter experts. Medical writing as a function became established in the pharmaceutical industry because the industry recognized that it requires special skill to produce well-structured documents that present information clearly and concisely.

Aufgabenspektrum

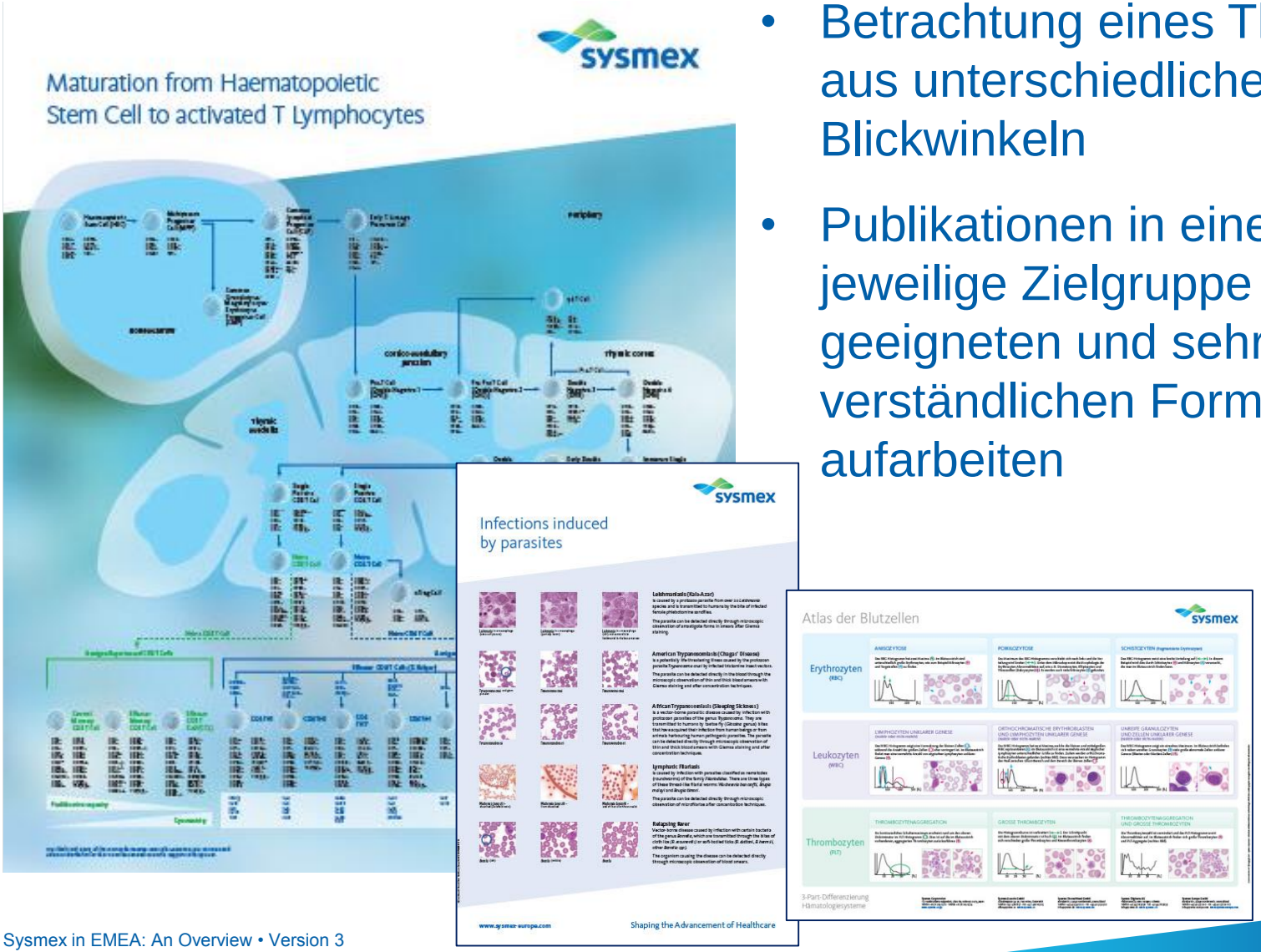
- Themenrecherche
- Rohdaten sammeln
- verständliches Verfassen von unterschiedlichsten Dokumenten







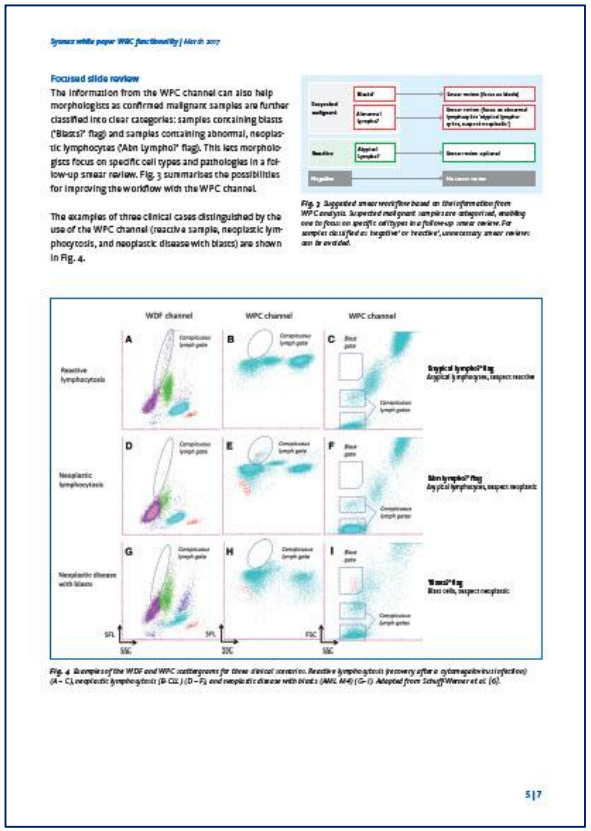
Aufgabenspektrum



- Betrachtung eines Themas aus unterschiedlichen Blickwinkeln
- Publikationen in einer für die jeweilige Zielgruppe optimal geeigneten und sehr gut verständlichen Form aufarbeiten

Ausprägungen

1. **Scientific Writing**
2. **Data Analysis & Quality Control**
3. **Medical Communications**
4. **Regulatory medical writing**



Sysmex white paper WBC functionality | March 2017

Focused slide review

The information from the WPC channel can also help morphologists as confirmed malignant samples are further classified into clear categories: samples containing blasts ('Blasts?' flag) and samples containing abnormal, neoplastic lymphocytes ('Abn lympho?' flag). This lets morphologists focus on specific cell types and pathologies in a follow-up smear review. Fig. 3 summarises the possibilities for improving the workflow with the WPC channel.

The examples of three clinical cases distinguished by the use of the WPC channel (reactive sample, neoplastic lymphocytosis, and neoplastic disease with blasts) are shown in Fig. 4.

Fig. 3 Suggested smear workflow based on the information from WPC analysis. Suspected malignant samples are categorised, enabling one to focus on specific cell types in a follow-up smear review. For samples classified as 'negative' or 'reactive', unnecessary smear reviews can be avoided.

Fig. 4 Examples of the WDF and WPC scattergrams for three clinical scenarios. Reactive lymphocytosis (recovery after a cytomegalovirus infection) (A – C), neoplastic lymphocytosis (B-CLL) (D – F), and neoplastic disease with blasts (AML M4) (G – I). Adapted from Schuff-Werner et al. [6].

5 | 7

- Analysieren und Überarbeiten von Daten
- Erstellung von Tabellen, Diagrammen
- Schreiben und Publikation von Artikeln, Technischen Dokumenten
- Schreiben von Zusammenfassungen
- Erstellung von Klinischen Studien, Postern und Präsentationen

Weitere Charakteristika

- Z.B. fundierte Kenntnisse über die internationale Zulassungspraxis von Medikamenten
  - Medizinjournalismus mit dem Schwerpunkt Online-Journalismus
- Fundierte englische Sprachkenntnisse in Wort und Schrift
- Kommunikatives Wesen
- Networker - Stakeholder:
  - Mediziner
  - Wissenschaftler
  - Redakteure
  - Marketingmanager/Produktmanager/MarCom
  - Legal/Regulatory
  - Sales

Ausbildung als gesunde Basis

Gibt es einen klassischen Studiengang?

NEIN

Aber was dann?

Ideale Voraussetzungen:

- Hochschulstudium, am besten in einer Naturwissenschaft: Medizin, Physik, Chemie, Pharmazie oder Biologie
- Optional: eine Fortbildung in Medical Writing
  - In acht Workshops, veranstaltet von der EMWA (www.emwa.org)

Wer ist der typische Medical Writer?

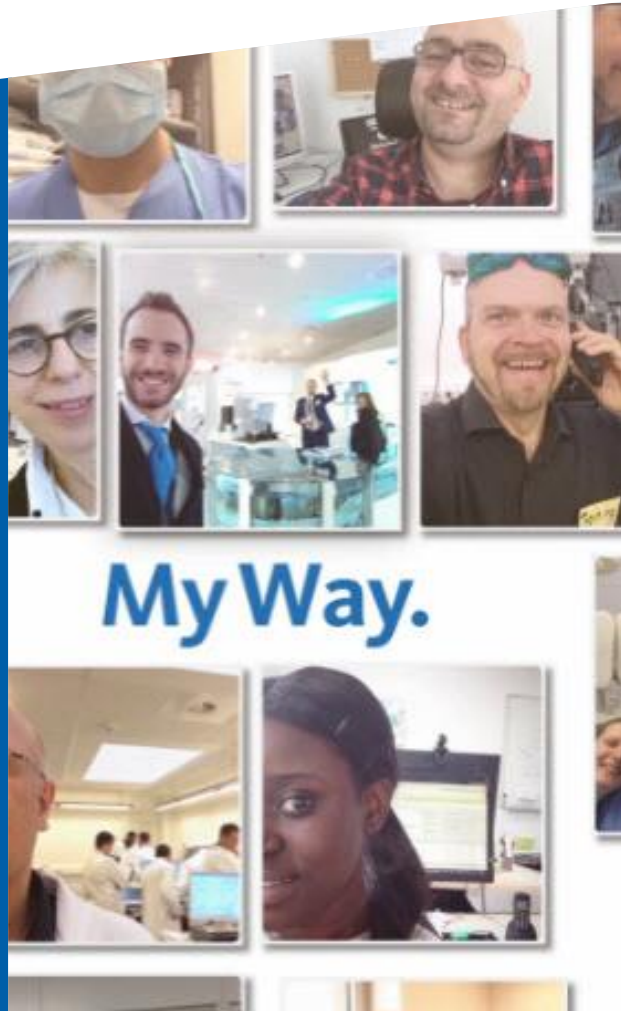
Ein typischer “Medical Writer” schreibt Dokumente im Kontext von Medizin und medizinischer Forschung, medizinische Studienberichte sowie journalistisch aufbereitete medizinische Informationen für Fachpersonal und Laien.

Was macht einen idealen Medical Writer aus?

- Fähigkeit, medizinische und wissenschaftliche Informationen mit Sachverstand und zielgruppenorientiert aufzubereiten.
- Eine gute Schreibe/ein der Zielgruppe angepasster Schreibstil
- Sprachgefühl und Stilsicherheit
- das Beherrschen medizinischer Fachbegriffe gepaart mit gesetzlichen, regulatorischen und versicherungstechnischen Kenntnissen
- Wiedergabe komplexer, medizinischer/wissenschaftlicher Inhalte in strukturierter Form
- Verstehen, um was es geht!

Working @ Sysmex

HR Development Programm



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Sysmex Trainee Education Programm

- Dauer 24 Monate
  - 16 Monate Job-Rotation innerhalb Sysmex Europe sowie
  - Je 4 Monate Aufenthalt in zwei Länder-Organisationen
- Vertrag ist zeitlich nicht limitiert
- Mentoren begleiten die Trainees über den Zeitraum von 24 Monaten

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Thank you for your attention

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