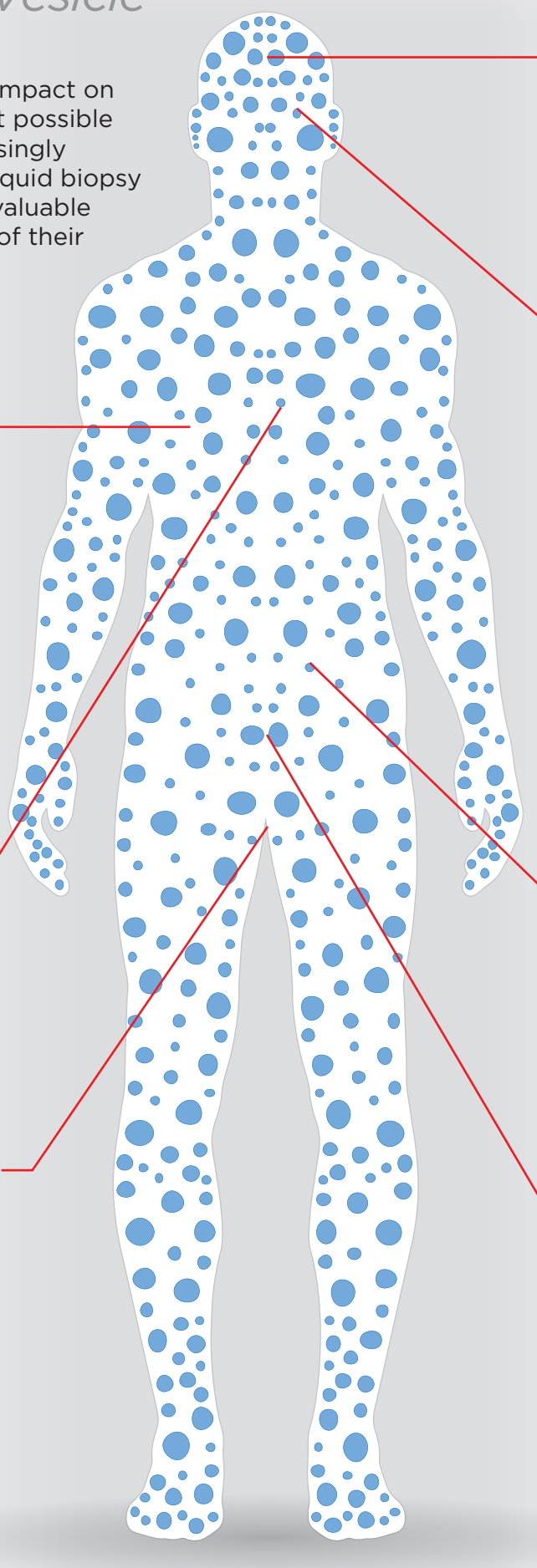
Exosome Biomarkers of Disease

Big Potential from a Little Vesicle

The tiny exosome *(30-120 nm)* is effecting a big impact on the landscape of molecular diagnostics, making it possible to diagnose and characterize disease with increasingly non-invasive methods. Whether isolated from a liquid biopsy or cell culture, these diminutive vesicles contain valuable information about the health and disease profile of their cell and organ of origin. Learn how scientists are interpreting the language of exosomes to better understand disease processes and prognoses.



THE **BRAIN**

Source(s):
Cerebrospinal fluid (CSF), Peripheral blood, Urine, Tumor cell-line media

Diseases Detected:
Alzheimer's disease[1-3]
Parkinson's disease[4-5]
Schizophrenia[6]
Bipolar disorder[6]
Glioblastoma[7-9]
Medulloblastoma[9]
Autism[9]
Multiple sclerosis[10]

THE **EYE**

Source(s):
Aqueous humor, Vitreous humor, Lacrimal-gland secretion (tears), Urine, Peripheral blood, Tumor cell-line media

Diseases Detected:
Uveal melanoma[11]
Glaucoma[12]

THE **LUNG**

Source(s):
Bronchoalveolar lavage fluid, Sputum, Peripheral blood, Urine, Tumor cell-line media

Diseases Detected:
Asthma[13, 14]
Non-small-cell lung cancer[15, 16]
Adenocarcinoma[17]
Hyperoxia-induced neonatal lung disease[18]
Emphysema[19]
Cystic fibrosis[20]

THE **CIRCULATORY SYSTEM**

Source(s):
Peripheral blood, Urine, Tumor cell-line media

Diseases Detected:
Myocardial infarction[21]
Atherosclerosis[22]
Cardiomyopathy[23]

THE **DIGESTIVE SYSTEM**

Source(s):
Gastric juices, Peripheral blood, Urine, Tumor cell-line media

Diseases Detected:
Gastric cancer[24]
Colon cancer[25]
Oral cancer[26, 27]
Periodontitis[28]

THE **REPRODUCTIVE ORGANS**

Source(s):
Breast milk, Vaginal secretions, Seminal fluid, Endometrium, Peripheral blood, Urine, Tumor cell-line media

Diseases Detected:
Cervical cancer[33]
Ovarian cancer[34]
Breast cancer[35, 36]
Prostate cancer[37]
Endometriosis[38, 39]

THE **URINARY SYSTEM**

Source(s):
Urine, Peripheral blood, Tumor cell-line media

Diseases Detected:
Bladder cancer[29, 30]
Renal-cell carcinoma[31, 32]

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